The American City

JANUARY 1949

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FRONT STREET

Wilmington, N. C.

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TEXACO ASPHALT

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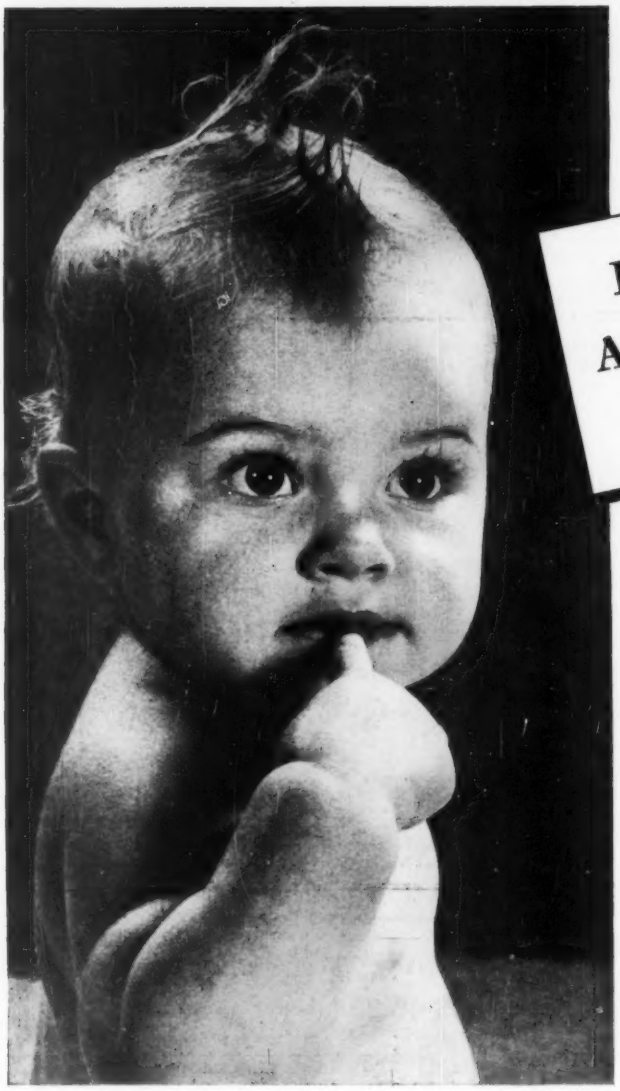

Have You Heard About the Telephone Birth Rate?

1948 was a mighty big year for additions to the telephone world.

Your own particular telephone is more valuable today, millions of calls go through clearer and quicker, because of the many things that have been done to extend and improve service.

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We broke all records for the volume of new telephone construction, the dollars we put into the job and the number of telephone people on the job.

We're going to keep right on working and building in 1949 to make your telephone service a bigger bargain than ever.

BELL TELEPHONE SYSTEM

Our Municipal Notebook

A New Proposal for Levying Special Assessments

AN AMENDED state special assessment statute, which would permit cities to impose an over-all levy on all land values to pay for certain specific improvements that yield general benefits, is recommended in the notable *Report of the Commission on the Economic Study of Milwaukee*, described on page 84 of this issue.

In the United States [it is pointed out] it has been customary to finance some public improvements, in part at least, by special charges on land which is benefited by the improvement. When used to finance streets, the charge is usually on adjacent land according to frontage and is limited to the cost or part of the cost of the improvement. The system works best in the case of improvements for strictly local use; it runs into trouble when the improvement is of benefit to others as well as to those along the path of the improvement. Generally, critics have favored the idea of special assessments, but have been critical of its administrative aspects. The degree of benefit has proved difficult to determine, and special-assessment practice is often described as arbitrary.

It is here suggested that the state special-assessment statute be amended to provide an alternative to the present allotment of costs to property according to frontage. An alternative to present practice would be to charge a reasonable part of the cost of improvements of general significance to all owners of land within the city according to the value of the land only. This would afford use of special assessments for the construction of arterial highways, the improvement of waterways or waterfronts, the relocation of railroad facilities, and any other improvement of city-wide benefit. It would leave the city with three alternatives for financing improvements: levies on abutting land, levies on all taxable property in the city, and levies on all land according to value. . . .

•

There are many advantages to this proposal. Its equity rests on the idea that public improvements which make the city a favorable place in which to live tend to create and sustain land values. The values of buildings are determined by their cost of replacement, that is, construction. The value of land is determined by the demand for it. A tax on buildings tends to make them more expensive; a tax on land acts like a mortgage and tends to make land cheap because a new buyer considers the tax in formulating his offer. Thus it has long been recognized that a tax on buildings reduces incentive, whereas a tax on land has few, if any, harmful effects on our economic life.

Some cities, notably in Australia, New Zealand, and Canada, have gone so far as to base their local tax system almost entirely on land taxation. In our own country, the demands on local government are too high to recommend such a radical narrowing of the tax base even if the state constitution would permit it. The levy of a special-benefit tax, however, as an extension of the special assessment procedure, would be a sound and conservative step in the right direction.

The proposal has other advantages too. It would reach tax-exempt institutions, and these have no occasion to object to some contribution that sustain or increase the value of their property.

Intermunicipal Agreements May Improve Services and Reduce Taxes

MUNICIPALITIES are urged by Samuel D. Hoffman, member of the New Jersey Local Government Board, "to make every effort to explore the possibilities of intermunicipal agreements for sharing services, equipment, and facilities in order to save unnecessary duplication of operating expenses and to hold down to a minimum the creation of new capital debt."

It seems to me [said Mr. Hoffman, at the recent annual conference of the New Jersey State League of Municipalities] that there is a feeling on the part of many municipalities that they are not an integral part of the entire state—partners in a broad sense—whose collective and mutual welfare and economic strength will bring benefits to each of them, but rather that they are autonomous and independent units, each of which seeks to be self-sufficient in every respect and seeks to compete with its neighbor regardless of the size or character of its ratables, its population, or its future potentialities for growth and development.

In private business, if a manufacturer can purchase his raw materials cheaper than he can make them, if his transportation costs make it cheaper to send his products by common carrier than to operate a fleet of carriers himself, if it would be cheaper to rent his equipment or the premises he occupies than to purchase them, if he can save money by making purchases collectively with others—he certainly loses no time to work out satisfactory arrangements by suitable agreements with benefits to himself and presumably those with whom the agreements are made. Yet in public business in the smaller municipalities, as well as the larger ones, the feeling persists that it is a sign of financial weakness to depend on another municipality for services, equipment or facilities.

I am convinced that this is a serious

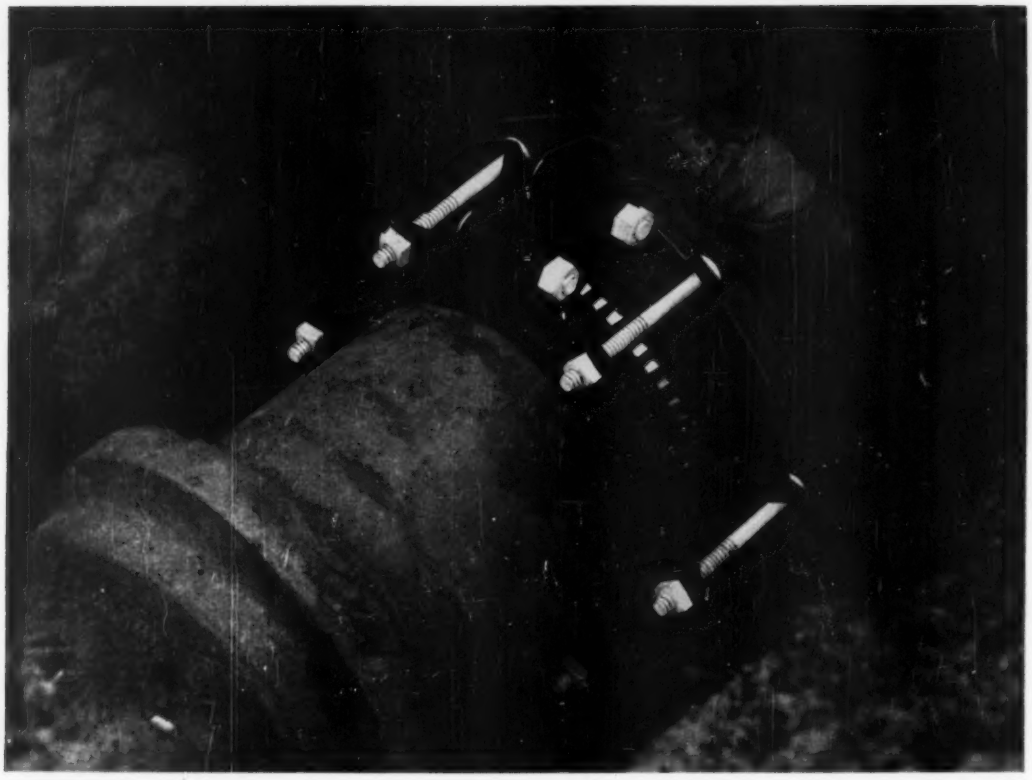
The American City Quiz

Match Wits with the Experts

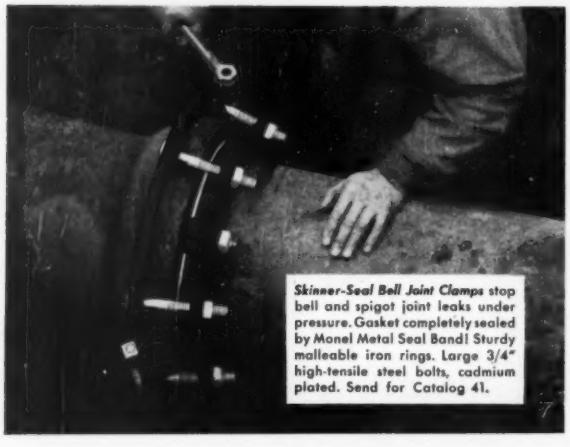
QUESTIONS

1. ***How high a percentage of the value of the average water works is in the distribution system?***
2. ***How do you correct frost boils in pavement already laid?***
3. ***Does any city process the municipal garbage for fertilizer, grease, or other useful by-products?***
4. ***To what extent does the addition of chemicals to water in coagulation or softening add to the chemical or mineral content of the water?***
5. ***In sewage treatment, what does "elutriation" mean, how does it work, what does it do to sewage?***
6. ***How does the cost of salt for ice removal and anti-skid protection compare with the use of cinders?***
7. ***Can main-line air terminals be placed close to residential areas without harming the property values?***
8. ***Which of these resources is the most important: water, coal, or oil?***
9. ***What part does salvage play in easing the steel shortage?***
10. ***What is the basic function of steel in concrete pavement?***

(Answers on Page 7)



One man repairs broken main!



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misconception. . . . How can we expect the large nations of the world, separated by thousands of miles, with different political ideologies, traditions, and historical backgrounds to get together on so many things, when two small adjacent municipalities find it hard to agree on numerous problems which could be worked out for their mutual welfare and advantage?

There are, of course, many functions, which could most effectively be discharged by the municipality itself. But certainly with respect to the smaller municipalities of the state, in the field of health services, furnishing of water, sewage disposal, garbage disposal, education, repairs to roads and highways, and such matters, there is opportunity for beneficial cooperation.

Municipal Legislators Discuss Councilman-Chief Executive Relationships

THE relationship of the councilman to the chief executive and to department heads were two of the major topics under discussion at the several meetings of the National Association of Municipal Legislators which were held in conjunction with the American Municipal Association's conference. A thoughtful paper on the first subject was presented by J. H. Patrick Glynn, City Commissioner of Pontiac, Mich., who was subsequently elected president of the one-year-old organization.

Ten districts were established, though the secretariat and office of the American Municipal Association in Chicago will continue to service the NAML. Phil Hamburger, City Councilman of Houston, was elected national vice-president.

District vice-presidents for the coming year are the following councilmen: Louis P. Gagne, Lewiston, Maine, District 1; H. Roy Wheeler, Linden, N. J., District 2; Douglas Tomkies, Huntington, W. Va., District 3; Lawrence F. Jones, Fond du Lac, Wis., District 4; James Fresques, Denver, Colo., District 5; F. R. Williams, Burley, Idaho, District 6; Arch B. Davison, Colusa, Calif., District 7; Dan Pouder, El Paso, Texas, District 8; H. P. Wassen, Chattanooga, Tenn., District 9; Sam Doughton, Columbia, S. C., District 10.

A Councilman's Prayer On Taking Office

By M. TELLEFSON

DEAR LORD, at this, the outset of a new experience and a new service, cleanse my heart and mind of all malice, all hatred, all jealousy that might linger there as a result of a bitter campaign or my own intolerance; let me approach my duties with an open mind and a friendliness toward all my fellow workers; let me recognize that the service that I am now entering upon is a sacred trust dedicated to the advancement of the greatest democracy in the world the abiding hope of all mankind; let me humbly recognize my own shortcomings and my inexperience in the technical and complicated ramifications of government, and let not my ego or self-conceit retard me from utilizing to the fullest knowledge and experience of those long in the public service; let me not forget that the organization in which my fellow citizens have placed me is one that has grown and developed through sacrifices and the labors of many faithful who have gone before; let me quickly recognize that my greatest contribution to the public service will not be by extravagant promises to reform mankind, or to disrupt the orderly processes of existing things, but rather by a patient and intelligent application of the principles of Thy Golden Rule.

Let me stand as the Rock of Gibraltar against the approach of evil influences and give me strength, dear Lord, to resist all temptations to corrupt practice of every kind. Grant that I may so conduct myself that I may have the confidence of my fellow workers and the respect and love of those under my supervision. In my contacts with my fellow citizens, who are my employers, endow me with a little of the wisdom of Solomon, the patience of Job, and the kindness of Jesus, and when my service has been called to a close, grant me that supreme satisfaction of knowing in my own heart, whatever be the cause of my removal from service, that I have served honestly, faithfully, and well.

The foregoing prayer for newly elected councilmen, by the City Attorney of Culver City, Calif., appeared originally in *Western City* for August 1948, in an article entitled "When a Man Becomes a Councilman." Reprints are available from Mr. Tellefson.

The American City Quiz

ANSWERS

1. L. R. Howson, of Alvord, Burdick and Howson, Chicago, estimates that two-thirds of the value is represented by the distribution system. Of this, 80% is in the mains and valves.

2. Cut cores out of the pavement and bore into the subgrade. Backfill the holes with two parts sand or pea gravel and one part calcium chloride.

3. Yes. Garbage processing is practiced today in Indianapolis, Ind.; Reading, Pa.; Schenectady, N. Y.

4. Not at all, says C. S. Timanus, of Burns and McDonnell Engineering Company, Kansas City, Mo. He points out that for each pound of lime added to water, 2½ to 3 pounds of calcium carbonate are removed in most softening work.

5. Basically it refers to washing sludge solids free of biochemically fouled water so the solids may be dewatered more easily in vacuum filters. It involves dilution, sedimentation, and decantation in water purer than the naturally fouled sludge water. This reduces both the volume of sludge to be dewatered and its liquid demand for the chemicals needed to render it drainable in vacuum filters. The latter effects are measured usually in terms of the ratio of water and its alkalinity to the dry sludge solids. For example, Springfield, Mass., reports that elutriation reduces the alkalinity of its digested sludge from 3,200 ppm at 8% solids to 200 ppm at 14% solids in the elutriated sludge. As a result the latter requires only 1.5% ferric chloride to condition it for vacuum filtration.

6. Harry Lewis, Borough Secretary, Homestead, Pa., found that it cost less to buy salt and use it for anti-skid protection than to use the free cinders. The cinders require street cleaning and clog the sewers and catch-basins.

7. In general, they cannot. Mr. J. Burrows Johnson, New Orleans real estate appraiser, states that airports have not enhanced real estate values near by. Lowell H. Swenson, Executive Vice-President of the National Aeronautics Association, says that the same care should be used in placing developments near large airports as when placing developments near large rail terminals.

* 8. Water, by far, since without it life cannot exist.

* 9. It plays an important part if it produces scrap iron for the furnaces. A ton of scrap in place of a ton of pig iron saves about 3¾ tons of natural resources.

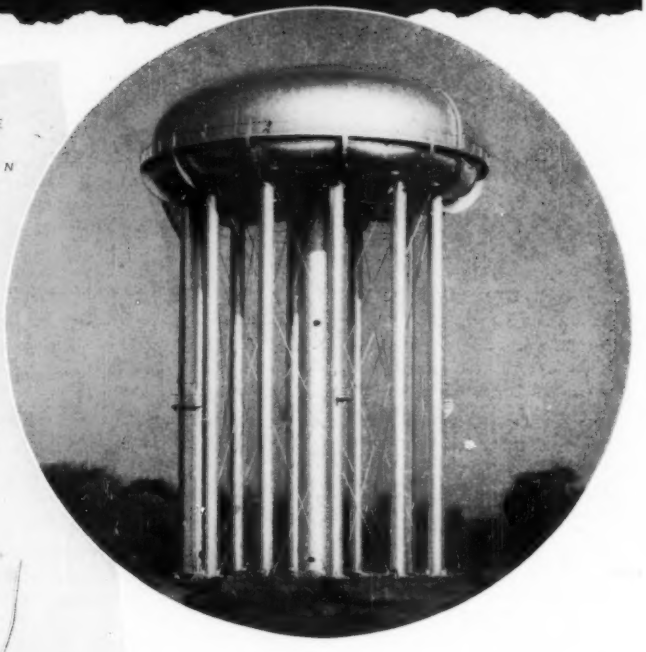
10. E. H. Henning, Engineer in the Highways and Municipal Bureau of the Portland Cement Association, states that steel is placed in concrete not to increase the strength nor prevent cracking, but to hold together cracks that may develop. If joints are spaced at short intervals so that they do not spread, no steel is required.

* From the American Iron and Steel Institute, *Steel Facts*, August 1948.

Elevated Storage serves Port Huron

- maintains uniform pressure in mains
- helps to meet peak loads

A map of Port Huron, showing where the Horton tanks are located to provide "distributed storage" at the out-lying points of the water distribution system.



The 1,000,000-gal. Horton elevated tank shown above, and another Horton tank of 500,000 gals. capacity, were erected at Port Huron, Michigan, where the water they hold in elevated storage is the source of gravity pressure in the water system. The engineer who installed the tanks expects the city to benefit in two principal ways. First, the tanks will hold a reserve of water which is built up during slack pumping periods, and at times when electric power costs are lowest. The reserve water will help the pumps to meet afternoon peak loads and maintain service during short-time pumping failures. Second, the tanks are located at opposite ends of the city in order to provide gravity water pressure in those parts of the distribution system most distant from the pumping station.

CHICAGO BRIDGE & IRON COMPANY

Atlanta 3.....2114 Healey Bldg.
Birmingham 1.....1502 North Fiftieth Street
Boston 10.....1002—201 Devonshire St.
Chicago 4.....2127 McCormick Bldg.
Cleveland 15.....2236 Guildhall Bldg.
Detroit 26.....1501 Lafayette Bldg.
Havana.....402 Abreu Bldg.
Houston 2.....2101 National Standard Bldg.
Los Angeles 14.....1403 Wm. Fox Bldg.
New York 6.....3308—165 Broadway Bldg.
Philadelphia 3.....1616—1700 Walnut Street Bldg.
Salt Lake City 1.....1501 First Security Bank Bldg.
San Francisco 11.....1233—22 Battery Street Bldg.
Seattle 1.....1301 Stuart Bldg.
Tulsa 3.....1625 Hunt Bldg.

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PENNSYLVANIA

Water Supply and Treatment

Seismic Reconnaissance For Ground Water

A SEISMIC survey will simplify well-drilling work, the New England Water Works Association members learned at their meeting in New York.

First to explain the working of this useful water-works tool was Rev. Daniel Linehan, S.J., of the Seismological Observatory of Weston College, Weston, Mass. The seismic reconnaissance, Father Linehan explained, is only an aid to the driller. Its fundamental purpose is to locate bedrock, not locate water yields. The location of the bedrock generally indicates the water yield, but the real test comes from the well that the driller sinks.

The glacial till disguises the underground features and makes a search for a good water-bearing location one of cut-and-try without a seismic study. The seismic investigations originated with the petroleum industry. For this purpose, however, the reflection method is used. This determines how quickly a sound wave travels to the oil-bearing bedrock and returns. In water supply, with the depths not nearly so great, the refraction method is preferred. This measures how fast sound waves travel through various strata. Unconsolidated loam has one speed, clay fills another, gravel still another, and in bedrock the sound travels fastest.

Thus by setting off small charges of dynamite with seismometers at intervals of 10 to 100 feet away from the blast, one can determine not only the depth of the rock but can also learn fairly well what material is in the overburden.

The bedrock depths generally can be determined within a few feet. If the spacing of the charges is greater than 50 feet, large boulders will not interfere. With larger intervals between the instruments, one can go to deeper bedrock elevations, sacrificing detail.

Father Linehan stated that as a general rule he can run eight to ten profiles per day. Each profile uses two charges with a quarter- to a half-pound of explosive, each buried three feet or more.

To be successful, the tests require large areas free from outside vibrations. High-voltage line and auto traffic frequently are troublesome.

The co-author, Scott Keith, project engineer with Metcalf & Eddy, Engineers, Boston, Mass., recounted how his organization has used the benefits of a seismic survey to locate good water-bearing areas.

A view of the 40-year old spillway ready for a Gunite application.

A New Face for An Old Dam

IN SPRINGFIELD, Mass. (population 159,896, 1945 state census), the water system uses a set of three dams to impound the water that is treated by slow sand filtration and sent into this industrial city for use. On the spillway area for one of these dams, water officials recently had to perform a job of "face-lifting" in order to extend the life of the spillway.

The dam and spillway were built in 1909 of rubble masonry construction. The spillway surface was faced with concrete. As the years went by, the subsequent freezing and thawing of the concrete produced scaling that threatened the structure itself. So in 1947 the city drew plans and prepared the area to be able to correct this fault.

The repair consisted of Gunite applied to the scaled surface. The old concrete was chipped away so that a firm, solid base remained. A mesh reinforcing was placed over the base and Gunite was shot onto the scaled surface in varying thicknesses, a greater part averaging 2½ inches. Several layers of Gunite and mesh were placed one over the other to some sections so that these areas would be even with the rest of the spillway.

Lewis & McDowell, Inc., New York, N. Y., performed the work and completed the job in six months. The work was supervised by Peter C. Karalekas, Chief Water Engineer.

New Findings on Fluorides As Dental Health Factor

A STUDY of 2,140 school children in South Dakota has brought new light on the subject of fluoridation as a dental health measure. According to Dr. A. L. Russell, Director, Division of Dental Health, South Dakota State Board of Health, this study has established a reasonable presumption that the following may be true:

1. That decay can be inhibited by fluorides incorporated into a tooth during the formative period.
2. That decay can be inhibited by fluorides incorporated into a tooth after the tooth has erupted.
3. That the decay preventative effect tends gradually to be lost from the tooth as time passes, and hence
4. That the teeth require periodic fluoride renewal if the decay-preventative effect is to be maintained.

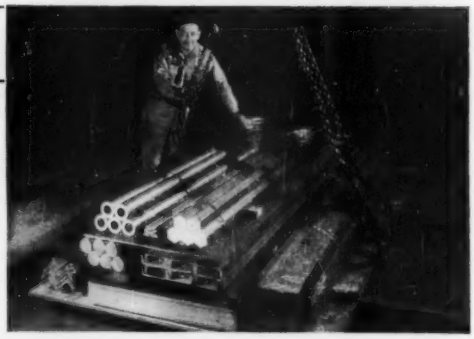
These last two points are new notions. If they are confirmed elsewhere, there are two important implications for water works application:

1. That fluoride exposure must be maintained for a lifetime and not just through the age of eight years.
2. That fluoride exposure may benefit all persons in the community, whether they were exposed before the age of eight or not.

Ryerson Answers Important Steel Questions

What can we get?

You can usually get enough carbon, alloy or stainless steel from stock to meet maintenance and repair requirements—and some new equipment needs as well. Tremendous demand often limits the amount that can be shipped, but stainless is in particularly good supply—in fact both alloy and stainless bar stocks and carbon and stainless tubing stocks are better than average. See the product list below.



Where can we get it?

For next-door steel service, call your nearest Ryerson plant or office. The nationwide network of Ryerson plants brings steel stocks within short shipping distance of almost any delivery point. As an added convenience for steel buyers, Ryerson maintains sales offices in many cities, connected by direct wire to a neighboring plant.

When can we get it?

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Joseph T. Ryerson & Son, Inc. Steel-Service Plants: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Los Angeles, San Francisco.

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SHEETS—Many types
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STAINLESS — Allegheny sheets, plates, bars, tubes, etc.
BABBITT—bearing metal
MACHINERY & TOOLS—for metal fabrication

RYERSON STEEL

Sewerage and Sewage Treatment

Rosemead, Calif., Constructs 16-Inch Sewer

Backfill consolidation was simplified at Rosemead during the construction of a 16-inch sewer; in order to prevent settlement, an RPB Model H-D pneumatic tamper was called into action. This is the same machine that is used for pavement breaking in many cases requiring utility cuts.

A Refuse-Sludge Incinerator

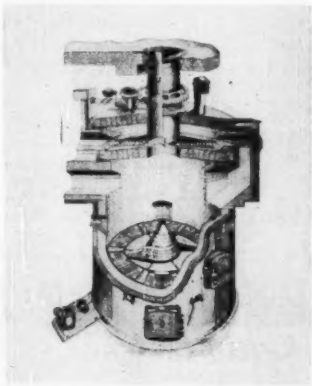
REFUSE and sewage sludge are incinerated together in the plant used by the Lederle Laboratories Division of American Cyanamid Co., Pearl River, N. Y. This combined waste-disposal operation was explained by C. H. P. Arbogast, general supervisor of Lederle Laboratories, at the Purdue University Industrial Waste Conference held recently.

The laboratory is located on a watershed that supplied drinking water for almost the whole of Northern New Jersey. Until 1945 waste collection was performed by open-spit burning and burying. The material to be handled consisted of combustible rubbish, garbage, manures, and certain valueless by-products from plant operation. The laboratory has its own sewage-treatment plant with open sludge-drying beds. This sludge also required some means of disposal.

To solve the problem, the Laboratory decided to install a new type of incinerator manufactured by Nichols Engineering and Research Corporation, New York City. This was known as the Nichols Duohearth Drier incinerator.

Dempster Dumpster boxes like these make the collection of trash simple.

A sketch of the Nichols Duohearth. Sludge is introduced and dried on the upper level. The refuse drops into the lower hearth with cone and rabble arm stokers.



It has an upper hearth for the sewage sludge and other wet materials that are dried by utilizing the heat from combustible trash, garbage, and waste materials burning in the lower chamber. The material is stoked automatically and continuously by rabble arms revolving on a central shaft.

Ashes are removed from the conical bottom of the furnace through a sliding gate and are discharged into Dempster Dumpster boxes. Temperatures in the hearth and combustion chamber are continuously recorded during operation on a Brown Instrument Company recording pyrometer.

How to Dispose of Radioactive Wastes

THE disposal of radioactive wastes from plants producing power by the process of nuclear fission is a problem of major consequence, but one which appears to be solvable. So stated Bruce R. Prentice before the Metropolitan Section of the American Society of Civil Engineers at a recent meeting in New York City. Mr. Prentice is on the staff of General Electric's Nucleonics Department.

Because of public speculation over the practicability of proposals to dispose of fission-product wastes by dispersing them in the ocean or elsewhere, the audience expressed particular interest in this problem. Would it be a serious limitation on the future of atomic-power plants?

Mr. Prentice gave his opinion that whether or not a practical or safe method of large-scale dispersion is ever developed, the radioactive wastes can be handled. If no better method is found, they can be stored and the storage containers monitored by instruments and guarded.

Actually the amount of fission-products waste which might be produced in this country in one year is very small compared to the amount of ash now produced from chemical fuels. About 50 tons of "atomic fuel," yielding 50 tons of fission-product wastes, could supply all the electric energy used in the U.S.A in one year—about 250,000,000,000 kilowatt hours. Of course the problems of concentrating, collecting, shipping, and storing radioactive wastes obviously involve overcoming many very difficult technical obstacles. However, Mr. Prentice expressed confidence that a workable and safe solution to such problems could be worked out.

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by

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REGULATORY SIGN
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Standard sized signs furnished as speed limit signs, school signs, or to your specified legends.

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U. S. Route Markers and auxiliary signs furnished to your specifications.

12" x 18"
This standardized sign furnished in blank, or with legend.

GUIDE SIGNS
13" x 10" . . . Supplied with various directional symbols, reflectorized, or plain.

COUNTY ROUTE MARKERS
12" x 12" . . . Now available as new county route markers. County name and route number supplied as requested.

There's a Columbia sign for every traffic condition backed by years of engineering research and approved by Highway Department Officials, everywhere.

Made from a tested proven material by an exclusive new process, Columbia Signs have the advantage of LONG LIFE . . . LOW COST . . . Immediate AVAILABILITY . . . and OFFICIAL STANDARDIZATION in accordance with new ruiings.

REFLECTORIZATION

COLUMBIA Markers and Signs assure the widest angle of legibility and visibility. No more than direct cost is charged for REFLECTORIZING . . . costing far less than if it were done in sign shops where quantity is limited.

NON-CORROSIVE:—Columbia's signs are protected throughout their entire thickness. . . . Are impervious to salt air and fresh water corrosion. Damage to any part can not cause deterioration. . . . GREATER SAVINGS:—Engineered to meet the most exacting requirements in accordance with the latest standardization set by the Revised Manual of Uniform Traffic Control Devices, Columbia Safety Markers offer exceptional savings because of their long life and lower maintenance cost. . . . COLOR PERMANENCE:—The color is not just a surface-coating with Columbia traffic regulation devices. . . . By a new exclusive process the color is integrally molded throughout the entire thickness. Pigments are the finest available assuring maximum color permanency and protection against ultra violet action. . . . VANDAL RESISTING:—Natural material resiliency resists hammering, pounding, bending and stone-throwing incurred by vandals. . . . LEGIBILITY:—Columbia color-molded signs with legends and reflectorizing are easily legible and have increased target value. Dust, dirt, foreign matter will not easily obscure their readability. . . . BRILLIANCE:—Reflectorized, Columbia signs shine with widest all-angle effective brilliance in any weather. At night the signs are easily read without headlight glare.

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COLUMBIA SIGNS

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. . . in various standard shapes and sizes in blank forms for standard legends and reflectorization or are furnished reflectorized with standard or requested legends. All have standard mountings.

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Just off the press. . . . It will give you a wealth of up-to-date Traffic Marker information.

Consult your Columbia Dealer or write to us direct. The Columbia Sign Planning Service is available to help you select proper signs, assist you with maintenance problems and point out ways of economy.

COLUMBIA SIGN & SIGNAL CORP.

303 SCHOFIELD BUILDING **CLEVELAND 15, OHIO**

Street Cleaning and Snow Removal

Philadelphia Tries Detergent Flushing

LAST June, while the Republicans and Democrats took turns punching at each other verbally in Philadelphia, the city's Bureau of Highways and Street Cleaning had under way a test of street flushing with the use of a synthetic detergent, the product tried was Ultrawet, made by the Atlantic Refining Co., Philadelphia. One gallon of solution was added to a flusher holding 1,800 gallons of water.

An 1800-gallon Etnyre is flushing water and a detergent on the streets. The flusher is using Ultrawet.

At present Leo P. Gallen, Assistant Chief of the Bureau of Highways and Street Cleaning, observed that the chief differences in cleaning was the reduction in bacteria count in the street. Tests showed the count down 80%. Quantitatively, it was difficult to measure the improvement that the detergent made in street flushing in terms of actual material washed away.

Another detergent tested was Triton, manufactured by Rohm and Haas, also of that city. Bureau officials report substantially the same results.

What Greenwich Needs For Snow Removal

LAST winter's experience with 26 inches of snow piled onto Greenwich, Conn., over a period of less than 14 hours prompted Commissioner of Public Works Joseph W. Cone to report in detail the snow removal problems in his town.

In a special report included in the 1947 annual report, Commissioner Cone pointed out that the snowfall broke records not only in amount but also in the rate of fall, and completely overwhelmed the snowfall equipment that he had on hand. In studying snowfalls of the past, he noted their probable occurrence:

26-inch	depth	or	more	once	in	50	years
20-inch	"	"	"	"	"	20	"
15-inch	"	"	"	"	"	7	"
12-inch	"	"	"	"	"	3	"
10-inch	"	"	"	"	"	1½	"
8-inch	"	"	"	"	"	each	"
3-inch	"	"	"	"	"	"	"

In the light of this, Commissioner Cone expresses the opinion that the town should be equipped to handle with reasonable promptness snowfalls with a depth of 15 inches. To accomplish this he feels it prudent to purchase the following additional equipment for Greenwich's 185 miles of roads and streets, supplementing the 24 pieces now on hand:

One ladder-type loader on rubber wheels
One heavy diesel grader
Three heavy four-wheel-trucks

The equipment now owned consists of:

1 Barber-Greene loader
1 Snogo rotary loader
2 Caterpillar graders, diesel with V plows
1 International gas-powered bulldozer
1 Caterpillar diesel-powered bulldozer
2 7-ton Mack trucks, 11-foot Walsh Holyoke blade plows
2 7-ton Autocar trucks, 11-foot Walsh Holyoke blade plows
2 4-ton International trucks, 8-foot Good Roads blade plows
12 smaller trucks of varying sizes and makes, all equipped with 8-foot Good Roads plows.

New Sanitation Equipment For New York City

IN A reorganization program, New York City is streamlining its Sanitation Department to provide improved street cleaning, snow removal, and refuse collection. Equipment now being received forms part of the program that will bring the total to 41 snow loaders, 200 cross plows, and 400 more collection trucks.

Four new incinerators also are planned to improve and ultimately eliminate the sanitary landfill.

The reorganization places Henry Liebman, a Department of Public Works engineer, in charge of the Division of Operations. Harry Serper is head of Administration. Casmir Rogus is chief of the Engineering and Planning Division.

Whose Truck Is This?

Yes, we had it wrong, and enough of our readers spotted the oversight so that we feel obligated to put things right. The refuse collection body is a Heil Colecto-Pak, displayed at the American Public Works Association Congress at Boston last October. Our story of the Congress appeared in the December issue.

Pays off

FOR TAXPAYERS

Tampa taxpayers get their money's worth from this husky "Caterpillar" Diesel D4 Tractor and No. 4S hydraulic Bulldozer. According to W. Miller McLeod, Superintendent of the Department of Sanitation of this progressive Florida city, use of this matched unit has cut the cost of garbage disposal, as well as making a saving in the wear and tear on trucks.

"The Sanitary Department purchased a new 'Caterpillar' No. 4S Bulldozer in July of 1947," Supt. McLeod writes. "This machine has been used continuously at the city dump, where we are using the sanitary fill method of disposing of the city garbage. It has given satisfactory service—with no repair charges to date."

From the operator's standpoint, Bob Harrison has this to report: "I've been working with tractors 20 years, and this D4 is the best yet for its size. It has plenty of power. It's always ready. And you can always get service and parts."

Besides being used for compacting the sanitary fill, this versatile D4 earns its keep on street maintenance and other odd jobs about the city. Like other "Caterpillar" equipment serving communities throughout the country, it's an efficient money saver—and that's what public officials and taxpayers want!

CATERPILLAR TRACTOR CO., PEORIA ILLINOIS

CATERPILLAR

REG. U. S. PAT. OFF.

DIESEL

ENGINES • TRACTORS
MOTOR GRADERS
EARTHMOVING EQUIPMENT

Soil-Cement Paving in Pampa, Texas

BACK in 1941, Pampa, Texas (population 10,470—1940 census) quietly sent one of its WPA crews to pave an inconspicuous alley with soil cement to see how this new method of street construction worked. They had little opportunity to pave more anyway, because the second World War brought construction such as this to a virtual standstill. But in the intervening five years they had plenty of opportunity to see how well it stood up.

The fact that it did meet expectations can be seen from the city's post-war paving program. In a report that the city made to the Portland Cement Association, Chicago, Ill., next year's soil-cement program will include 100 blocks, or nearly seven miles of surfacing.

Steve Matthews, City Manager, and Dick Pepin, City Engineer, will direct the work. Both have had experience with soil-cement paving since its introduction to Pampa.

How to Patch Bituminous Pavement

PROF. BEN PETTY, of the School of Civil Engineering, at Purdue University, Lafayette, Ind., makes these four suggestions for better bituminous patches:

1. *Edge Ravelers.* When patching a shallow depression where no surface cut is to be made, try spreading paint or tack coat an inch or two beyond the limits of the proposed patch. And use fine enough aggregate so that you can get a fairly thin feather-edge.

2. *Fat Softies.* Always remember that you can add bituminous material to aggregate, but you can't subtract an excess after it once is in the patch. How many men in your patching crews possess sufficiently keen judgment to estimate the exact amount of bituminous material to pour in a hole in proportion to the aggregate used? The general idea seems to be that "if a little is good, then more is better." Result—fat, soft, and shovey patches. Pre-mixing batches for patching should eliminate such defects if proper quality and quantity of materials are used. Excess bituminous material may drain out in the stockpile.

A little extra work in carefully cutting a vertical edge around the patch hole usually pays good dividends in properly confining the patch material.

3. *High-Low Nuisances.* The proper thickness of the patch to allow for final traffic compaction "is a case of good judgment." We acquire judgment by experience. And when once acquired, it is a pity to chuck it and start all over again because of a political upheaval. If the patch is too high, the final result probably will be two additional holes, one fore and one aft of the patch. If it is too low—well, we can always add a thin layer. But wouldn't it be nicer, if we got them right the first time?

4. *Back to Those Fatties.* A good bituminous road-mix or bituminous concrete surface, after a few months of traffic, should not be black, but should take on the color of the aggregate used. If it continues a coal-black color, it probably contains too much bitumen, which sooner or later may develop corrugations.

Naturally, that goes for patches too. Fat patches disclose your hand to the traveling public. Their coal-black color makes them stick out like a sore thumb in the surrounding, lighter-colored road surface, thus giving the motorists the idea that you must be a poor road man if your surfaces need so many patches.

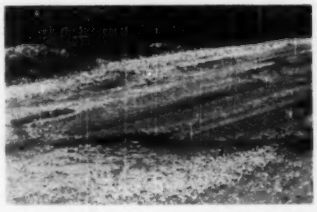
Cut down on the quantity of bitumen and the patches will so blend with the rest of the surface (if similar aggregate is used) that they will not be readily discernible. If you use too little bitumen and raveling starts, you can always seal these patches.

Leaner patch mixes always are desirable where you plan to re-seal or surface-treat that section of road the same season. A fat patch will bleed right up through the new seal or surface treatment, and all the old patched areas become readily discernible to the traveling public.

PHOTOS COURTESY OF PURDUE UNIVERSITY JOINT HIGHWAY RESEARCH PROJECT

Ripe for patching. Delay boosts costs.

A fat "shovey" patch. Avoid these.



High patch makes enemies of autoists.

Why Cities Prefer GAMEWELL

The unequalled service records of Gamewell Police and Fire Signaling Systems — in many cases exceeding half a century of continuous operation — unfailing reliability, and low maintenance costs are excellent reasons.

◄ 1886

POLICE OPERATOR'S DESK

Installed in Manchester, N. H., in 1886, as it appeared after 62 years of continuous service and shortly before replacement by the modern operator's desk shown below.

•

This is but one of many similar service records and tends to explain *Why Cities Prefer Gamewell Systems.*

1948 ►

***Modern* POLICE OPERATOR'S DESK**

The desk is equipped for 8 patrol box circuits, 3 re-call circuits with a Peerless type re-call signal transmitter. Two Gamewell Peerless type police signal recorders are mounted on top of the cabinet.

All fire alarms are relayed over a direct line from Fire Headquarters and are recorded by a motor-driven register on the tape automatically drawn across the front of the operating panel.

•

Gamewell Systems are good investments in public safety — their cost, amortized over their terms of service, is extremely low.

We invite your inquiry.

THE GAMEWELL COMPANY

NEWTON UPPER FALLS 64, MASSACHUSETTS

In Canada: The Northern Electric Company, Ltd., Montreal

Public Safety

Boston Police Keep Disc Record of Radio Calls

By CAPT. ARTHUR H. VICKERSON
Chief Radio Operator
Bureau of Operations
Boston Police Department
Boston, Mass.

IN ORDER to be able to prove the exact wording of two-way radio calls with police cars and boats, and at the same time satisfy federal requirements, we installed a dual SoundScriber on August 21, 1945. The machine was connected directly to the police radio circuit so that both sides of the conversation are recorded. SoundScriber has never missed a message.

Calls for the play-back of the SoundScriber plastic discs which we keep on file average about one a week. There are many reasons for such play-backs. Police officers seldom claim that they answered a certain call from the car, if they did not do so, as the record will show whether they did or not. This has proved an excellent disciplinary control. The rules of the Bureau of Operations require that the dispatcher report all failures to answer calls. The SoundScriber record proves whether or not he has done so, and serves to insure his impartial reporting of such failures.

We have taken discs to court as evidence during trials, and played them back over a loudspeaker to the court to prove what was said on these police calls. The record shows clearly how the police responded, what they did, what they found, and therefore serves as on-the-spot evidence of great value.

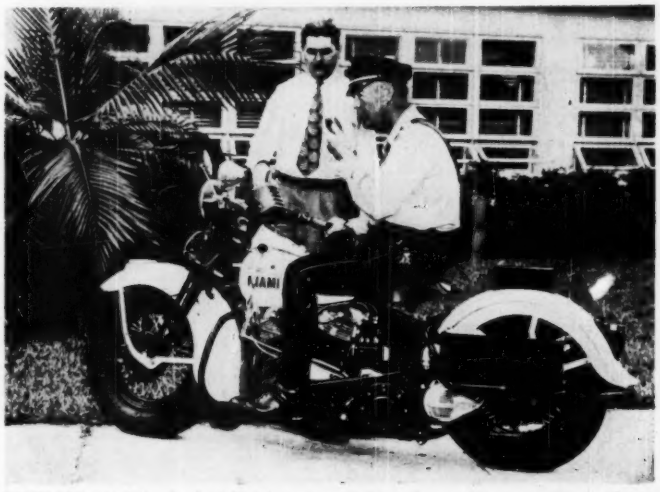
The Boston Police Department territory covers 45 square miles of land and an equal water area. There are 102 two-way police radios in cars, 26 in the combination patrol wagon-ambulances, and 4 in police boats. Most radio communications are with an average of 50 patrol cars—about 12 per car per day.

The department is recording from 600 to 900 radio transmissions every 24 hours. The total time of recording is three hours for an average of 600 messages of 18 seconds' duration.

The comparative cost of the disc against that of typing from wax cylinders shows a saving of $1,500 a year, which returns 200% or more annually on our investment in the equipment. Practically the only operating cost is the 7-inch plastic discs, amounting to 60 cents a day. The cost per disc is less than 10 cents. At an average of 100 calls per disc, this is equal to 0.1 cent per call.

Captain Vickerson placing a disc on the standard desk model of The SoundScriber Corp. Inc., New Haven 4, Conn. Behind him is the Dual SoundScriber, connected directly to the police radio circuit and recording two-way calls.

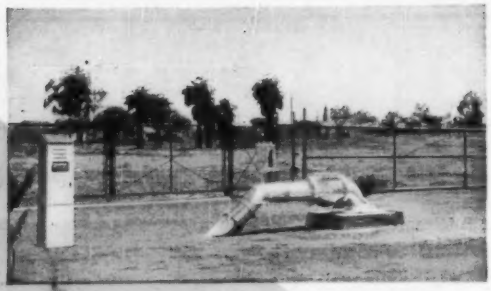
Miami's New Two-Way Radio



POLICE officials check Miami's new 2-way FM radio-equipped motorcycle developed by Motorola in cooperation with Harley-Davidson. It employs a strip transmitter and receiver in weather-proof and shock-proof saddlebag housings. The oil tank is supplanted by a heavy-duty generator and the tank mounted to the rear of the saddle.

Said Ben Demby, Communications Division Superintendent, "It is effective up to 20 miles from our 30-watt central station." The two men are Ben Demby and Police Lieutenant Clark.

soon
to be surrounded
by homes...



City of Long Beach picks the Submersible for three reasons

Quiet? Yes, because the submersible is a close-coupled motor pump unit *completely submerged* near the bottom of the well. But six Byron Jackson Submersibles were chosen for new subdivisions because the City and consulting engineers for the Municipal Water Works found three clearly defined operating advantages: (1) no danger of contamination or interrupted service because of vandalism, bombing or sabotage, (2) reduction of steel requirements and elimination of shaft and bearing troubles, and (3) lower overall maintenance costs.

BJ submersible pump

quiet...

For further information write for the "BJ Submersible" booklet.

Byron Jackson Co.
Since 1872
LOS ANGELES 54, CALIFORNIA
Offices in Principal Cities

Airports and Aviation

Berkeley, Calif., Helicopter Landing Field

THE Berkeley, Calif., council recently okayed creation of a helicopter landing field atop a local hospital for emergency ambulance service.

The International City Managers' Association reports that the landing field on the roof of Herrick Memorial Hospital has been approved by the Civil Aeronautics Authority as well as the city council.

Cleveland's Front-Door Airport

THERE is an airport being built on the shore of Lake Erie, in the shadow of Cleveland's Terminal Tower, within walking distance of the Cleveland Stadium. Right now the airport has a single flight strip 2,750 feet long and 200 feet wide. Eventually it will have two runways that will be at least 3,500 feet long and may be extended to 5,000 feet.

This small airfield, limited in operation to private planes, puts the flying businessman within easy access of commercial Cleveland (population 902,471). Many plane owners have avoided Cleveland in the past because of the time consumed in ground travel between the big municipal airport and the downtown area. The trip involves a 12-mile drive. Today, by actual test, one can leave the city stadium, go to the airport and fly to Mansfield, Ohio, for example, faster than one can go by car to Shaker Heights, a Cleveland suburb.

The operation income of this little port is more than meeting operating expense. Typical figures, for June of this year, showed the income totaling $1,240 of which $440 came from tie-down fees, $352 from hangar rentals, 112 from landing fees, $29 from service charges and the balance from the sale of gas and oil. The operating expenses for this same month was $1,200, most of it for salaries for the flight supervisor and his three mechanics.

The airport is being constructed by building a breakwater between the existing flight strip and the lake. This area between the runway and the breakwater is being filled by dredging from the lake. Money for the airport has been appropriated at the rate of $500,000 per year. The airport should be completed within three years. When completed it will have control tower, lights, and everything that makes for efficient all-weather 24-hour per day operation.

The airport is managed by John Berry, Commissioner of Airports, who has charge of all Cleveland air facilities. The port operation is supervised directly by John A. Doyle, Flight Supervisor.

Non-Aviation Activities at Former Surplus Airports

COMMUNITIES are profitably operating former military surplus airports by supplementing aviation revenues with a wide variety of activities, ranging from barn dances to motorcycle races, D. W. Rentzel, Administrator of Civil Aeronautics finds.

CAA records reveal that 357 airports have been turned over to communities, as of August 31, after they had been declared surplus by the military. The CAA's duty in these transactions was to advise whether the airport should be kept in operation as an airport or returned to some other use. CAA officials have made a total of 1,648 surveys since the program started in December 1945, on 884 different fields. Airports under survey were considered as a potential part of the "adequate national airport system" which the CAA now is developing with the $500,000,000 federal authorization provided in the Federal Airport Act.

Recognizing that these surplus airports would require a great deal of maintenance and that the grantees should be assisted in obtaining revenue to carry out their obligations, Congress enacted an amendment to the Surplus Property Act known as Public Law 289, which, among other things, authorized the transfer of surplus property needed to develop sources of revenue from non-aviation business at such airports. Since the enactment of this law in July 1947, communities acquiring surplus property for such purposes have put the property to many gainful uses.

Liberal, Kans., with a population of only 8,600, took over a huge army airfield that had been advertised as a "white elephant." In the period between July 1947 and August 1948, the revenue exceeded the cost of maintenance and operation by $26,000. Two flight operators are functioning on the field. Eight large warehouses have been rented for such purposes as grain storage, truck body storage, an interior decorator, and a plastic sales concern. The demand for business locations now exceeds the supply. Liberal now boasts a lighted baseball field, a nine-hole golf course, and buildings for fairs and other large gatherings, all producing revenue on the site of the airport.

Sebring, Fla., a community of just over 3,000, took over Hendricks Field, comprising 1,460 acres located six and a half miles from the town. Aviation activities are comparatively light, but the field is kept as a landing facility with a beacon operating during the hours of darkness. Despite the lack of flying, the field is operating on a cash basis and a reserve is being built up by rental of space to 10 business firms collectively known as the Air Terminal Business Associates. Repairs and improvements are undertaken by the members with their own labor and equipment. Twenty-seven former army administration buildings and barracks have been made over into living quarters and rented. Free quarters are provided for transient pilots and CAA personnel.

In direct contrast to the small amount of aviation activity at Sebring, the City of Savannah, Ga., made a municipal airport out of the former Hunter Field, which has 20 scheduled flights per day by three airlines. However, most of the revenue comes from non-aviation activities on the field. The former guardhouse is utilized as a hospital, the bomb-trainer building has been converted into use by a transportation-equipment company, a cold-storage company occupies the former "alert crew" shack, while an awning company is in business in the old armament building. The seven mess halls house business ventures from a kindergarten to a pistol range. Business is reported to be good and the city is realizing more than $50,000 per year in rentals above maintenance expenses at the airport.

The motorcyle race track at Santa Barbara Municipal Airport in California yields 10% of the gross receipts for the maintenance and operation of the airport. Other revenue comes from the storage and repair of sailboats. Also, there is a golf driving range which brings $50 per month into the city treasury.

EVEN ON JOBS AS TOUGH AS THESE

Texaco Marfak seals out dirt and moisture . . . reduces maintenance costs. That's why more than 300 million pounds of Marfak have been sold!

BULLDOZE wet, sticky mud . . . churn through desert dust and heat . . . no matter how extreme the conditions, chassis parts get greater protection and last longer when lubricated with *Texaco Marfak*. Maintenance costs are lower!

Texaco Marfak stays in the bearings. It won't work out in rough service or under heavy loads. Ordinary road splash won't wash it out. *Marfak* forms a tough "collar" at the edge of a bearing, sealing itself in and sealing out dirt and dampness. It keeps moisture off metal, protects against rust. And because it's long lasting, fewer applications are needed.

In wheel bearings, *Texaco Marfak Heavy Duty* assures similarly *long-lasting* protection and worthwhile reduction in maintenance costs. *Marfak Heavy Duty* also seals out dirt and moisture, seals itself in, and protects against rust. It won't leak onto brakes . . . requires no seasonal re-packing.

OTHER LUBRICANTS FOR FURTHER PROTECTION

Keep Diesel and heavy-duty gasoline engines clean by lubricating with *Texaco Ursa Oil X*★★. This is a fully detergent and dispersive oil, made to assure trouble-free operation, maximum efficiency, minimum fuel costs.

Protect track rolls from dirt and moisture with *Texaco Track Roll Lubricant*. It seals out contaminants, assures longer bearing life.

Let a Texaco Lubrication Engineer tell you about Texaco's Simplified Lubrication Plan to assure more efficient and economical performance from all your equipment. Just call the nearest of the more than 2300 Texaco Wholesale Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

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Tune in . . . TEXACO STAR THEATRE every Wednesday night starring Milton Berle. See newspaper for time and station.

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Please check over the list of interesting free catalogs on this and following pages. To obtain the literature you want, write directly to the manufacturers, or circle the identifying numbers on this coupon and mail to THE AMERICAN CITY MAGAZINE, 470 Fourth Ave., New York 16. We will see that catalogs are sent to you without expense or obligation.

1/49

364	365	366	367	368	369	370	371	372	373	374	375	376	377	378
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Name ..... **Position** .....

Address .....

Steel-Like Rubber Traffic Cone

364 The Enterprise Development Corp., Burbank, Calif., has introduced a rubber traffic cone which gives the appearance of steel, but which is collapsible, proving comparatively hazardless in case of accident. These collapsible rubber traffic controls are highly flexible, and light in weight, so they can be handled and stored easily.

Maneuverable Shovel-Crane

365 The Series 8 truck shovel-cranes manufactured by the Michigan Power Shovel Co., 373 Second St., Benton Harbor, Mich., hold ½ yard, 8 tons. In styles available with single- or twin-engine power, two- or four-wheel drive, these trucks may also be obtained on the twin-engine models with remote control for fast maneuverability on the job. Write for Bulletin 101. Ask also for *Michigan on the Job*, which describes the Crane model.

Piping Heats Building

366 One of the uses of Ric-wiL insulated piping is in the transport of heat from a central steam generating plant to nests of municipal buildings. Write for a case history on central heating for institutions, Booklet 4713, to the Ric-wiL Co., Dept. 11812, Cleveland, Ohio.

Immediate Delivery on Diesels

367 The new Enterprise diesels available for immediate delivery, Model DSG-6, come with 375-kva. 300-kw Ideal Electric Co. a.c. generators, 450 rpm. Information about these low-speed, fully-guaranteed diesel units for electric power requirements, which are offered at less than the manufacturer's list prices, may be obtained from the A. G. Schoonmaker Co., Inc., Power Division, 50 Church St., New York 7, N. Y.

Silence Noisy Man-hole Covers

368 Rattling, clanging manhole covers can be silenced with Sidu's solid rubber cushion, radius molded to fit the average manhole seat. The cushion requires no fitting and tamping, and no mastics or oils. The curve eliminates crimping, packing, and hand forming. Write the Sidu Co., Box 3537, Long Beach, Calif.

Complete Service For Elevated Water Tanks

369 By welding seams, pits, and rivets, the Dixie Tank and Bridge Co., 3523 Lamar Ave., P. O. Box 14, Memphis 1, Tenn., gives a riveted tank 15% more safety factor than it had when built. Water supply service continues during the process. Write for *Sound Principles of Water Tank Maintenance* and *Tank Talk*, by W. A. Riley.

Electric Pre-Heater Saves Batteries

370 The Kim Hotstart electric pre-heater for stationary and mobile engines, diesel or gas, provides quick, easy starts regardless of the weather, effecting a definite saving in motor-wear and batteries. The pre-heater draws cold water from the engine, heats it, and forces hot water back into the engine block. Write for literature to the Kim Hotstart Mfg. Co., West 917 Broadway, Spokane 11, Wash.

Make Various Signs With One Kit

371 The Mak-A-Sign Co., P. O. Box 2290, Birmingham, Ala., manufactures a kit that contains letter-changing stencils so that innumerable legible signs can be made on curbs, sidewalk wood or concrete posts, and signboards. Write for a folder.

Blind Digging Wastes Time

372 The Fisher M-Scope pipe and cable finder locates pipe bends, dead ends, and service stubs, and traces the exact course of buried pipe and cable lines buried up to 12 feet deep. Eliminate costly approximations as to where to find these when repairs become necessary. For a 16-page operating manual describing the mechanism, write Dept. 3, Fisher Research Laboratory, Inc., Palo Alto, Calif.

Municipal Ambulance Mounts on ¾-1-Ton Chassis

373 The municipal ambulance body by the Oltman-O'Neill Co., 23500 Sherwood Ave., Centriline, Mich., mounts on any ¾- to 1-ton flat-face cowl, short-wheelbase chassis. Within the ambulance body a stretcher can be carried above the folding cot, and there are two recessed cabinets for storing stretchers. The body has a sliding partition window, fan, roof ventilator, and dome light. There is a jack-knife door to the driver's compartment, and there is storage room for blankets under the attendant's seat. A large steel cabinet and a shelf hold first-aid materials.

Analytical Tool For Puble Health Departments

374 Public health departments will find data on the Klett Electrophoresis apparatus of value in their laboratory analyses; it is a custom-made tool for the analysis of complex colloid systems, and for the control of production of purified proteins, enzymes, and hormones. Write the Klett Mfg. Co., 179 E. 87th St., New York, N. Y.

Make Slush Non-Corrosive

375 Banox, one pound of which treats 100 pounds of salt or calcium chloride, stops the slush-caused rusting of car and truck bodies, gratings, bridges, and other steel construction. Protection lasts through later thaws and rains, and the chemical is odorless and harmless to skin, eyes, clothing, plants, trees, as well as to paint, automobile finishes or tires. Write for information to Calgon, Inc., Hagan Bldg., Pittsburgh 30, Pa.

New Dick Mimeograph

376 To the completely new line of mimeograph models announced in August 1948, the A. B. Dick Co., 720 W. Jackson Blvd., Chicago 6, Ill., now adds Model 435 and a new ink that dries on contact.. The new mimeograph has a built-in motor, and is on a low stand with foot control for sit-down operation. The new line features production up to three sharp copies a second in sizes from 3 by 5 to 9 by 16 inches.

The Effects of $CaCl_2$ On Portland Cement

377 A 40-page booklet concerned with specifications, design, or production of portland cement concrete and the effect of calcium chloride may be obtained from the Solvay Sales Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

Non-Corrosive Highway Markers Cut Down Accidents

378 Columbia signs, non-corrosive, are available in various standard shapes and sizes in blank forms for standard legends and reflectorization, or are furnished reflectorized with standard or requested legends. All have standard mountings. A feature of these signs is that the color is integrally molded throughout the entire thickness of the sign. Write for a descriptive booklet to the Columbia Sign & Signal Corp., 303 Schofield Bldg., Cleveland 15, Ohio.

Calendar That Tells About Sewage Treatment Plants

379 The Dorr Co., Inc., 570 Lexington Ave., New York 22, N. Y., will send you its 1949 calendar, which not only tells the day of the month, but also has large photographs of various sewage-treatment plants and pertinent data about each as to the type of equipment used.

(Continued on Page 23)

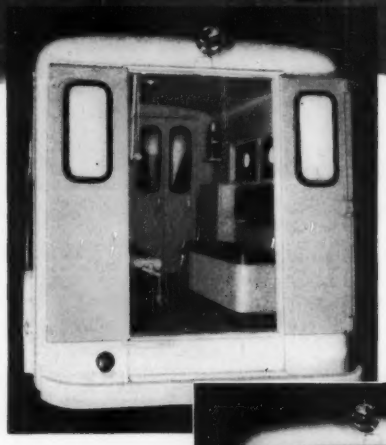
AMERICA'S NEWEST AND STRONGEST

Municipal Ambulance

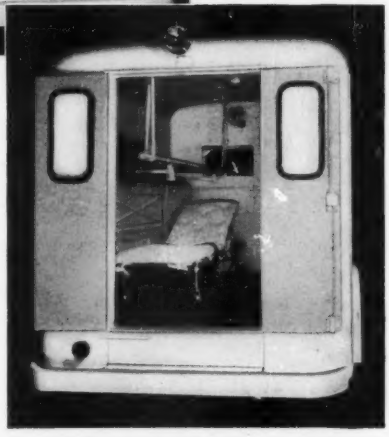
body by OLTMAN

This new municipal ambulance body features all-steel construction and is designed for mounting on any ¾-1 ton flat face cowl, short wheelbase chassis. This relatively low priced combination fully meets the wide demand for a more practical ambulance—a generously proportioned unit which will provide essential comfort and safety for patients and which can be purchased without burdening close budgets.

Sold through truck dealers only.



This view shows the jackknife door to driver's compartment, attendants' seat on metal base which holds blankets, etc. . . . large steel cabinet for first-aid materials and shelf for two thermos bottles.



This view of the Oltman ambulance body reveals its unusual completeness . . . A stretcher can be carried above the folding cot . . . note the sliding partition window, fan, roof ventilator and dome light . . . there are two recessed cabinets for storing stretchers.

OLTMAN-O'NEILL CO. 23500 SHERWOOD AVE. CENTERLINE, MICHIGAN (SUBURBAN DETROIT)

Your Catalog Supply Service

Please Use Coupon on Page 21

Sewage Sludge Dewatering Equipment

380 Eimco continuous vacuum sewage sludge filters eliminate the danger of disease-spreading insects breeding in open sludge beds, and provide safe disposition of sludge without tanks and drying beds. Write for information about this sludge dewatering equipment to the Eimco Corp., Salt Lake City 8, Utah.

Power for Present Needs Plus Future Growth

381 Enterprise 4-cycle diesel engines and generating sets are available in a range of sizes up to 1,800 hp per unit, turbocharged or normally aspirated. Bulletin No. 203 describes in detail how these diesels offer not only power for present needs, but expansion possibilities in case of growth. Write the Enterprise Engine & Foundry Co., 18th & Florida Sts., San Francisco 10, Calif.

Vibrators Make Better Concrete

382 Better concrete is obtained through the use of the right kind of vibrating equipment, used correctly. The Vibro-Plus Corp., 243 West 55th St., New York 19, N. Y., manufactures a Type ER vibrator which is completely enclosed and self-contained with a built-in three-phase motor and eccentrics.

Cutting-In Valve and Sleeve For Sand-Cast, Cast-Iron Pipe

383 No lead, no jute, no joints to caulk are the major advantages of the Eddy mechanical joint cutting-in valve and sleeve for use with either AWWA sand cast pipe in classes A, B, C, and D, or Federal Spec. WW-P-421 centrifugal cast iron pipe in classes 100, 150, 200, 250. Write for an illustrated brochure to the Eddy Valve Co., Waterford, N. Y.

Road Magnet Prevents Flat Tires

384 A bulletin describing the new Dings high-intensity road-sweeping magnet, designed for mounting on a truck with power supply from a portable engine-generator set, tells how nails, spikes, and other sharp pieces of steel and iron can be removed from landing strips, streets, and areaways. Ask for Bulletin No. B-1302A, the Dings Magnetic Separator Co., 4740 W. McGeogh Ave., Milwaukee 14, Wis.

Traffic Control Devices Earn Revenue

385 The Duncan Miller meter and the Automaton, which winds itself, are two traffic control devices that not only prevent traffic jams by eliminating tight-squeeze parking, but also earn revenue for the municipality. Write for an illustrated catalog to the Duncan Meter Corp., 835 No. Wood St., Chicago 22, Ill.

Keep Streets, Parks Free of Litter

386 The Norwich Wire Works Co., 49 Collins Court, Norwich, N. Y., will send you a circular describing how to keep streets and parks free of litter. The company's products, wire trash baskets, form one phase of the campaign; the other is an educational program.

One Bucket Loader Keeps Truck Fleet Loaded

387 The Pettibone Mulliken Corp., 4700 W. Division St., Chicago 51, Ill., has just issued a new 12-page circular, SBC-1048, on the Haiss heavy-duty bucket loaders equipped with an integral swivel belt conveyor that has a 180° swing, so that various models can load 3 to 20 cubic yards per minute, 4,000 tons in a 16- to 20-hour day, excavating to 5-foot depths in wet, hard-packed limestone fines.

Municipal Budget Records

388 To keep tab on budget figures, city officials must have more complete records, while they are still up to the minute. Burroughs' new Budgetary accounting machine incorporates automatic totals-to-date and balances, automatic proof totals, automatic line-lock proof of balances, automatic printing of dates and ciphers. Write the Burroughs Adding Machine Co., Detroit 32, Mich.

Restore Old Structures

389 Stone, brick, concrete or metal structures can be repaired, reinforced, or rebuilt economically by the Gunite process. Write for full information about this method to the Cement Gun Co., Allentown, Pa.

Keep Sewers Open With Power Sewer Cleaner

390 The OK Champion power sewer cleaner removes roots, dirt, sand, and other debris from the main in one continuous operation, with all workers on the street level. Pulling forward opens the jaws; reversing the pull on the bucket automatically closes the jaws which hold the load as it is pulled back to the street level. Write for details to the Champion Corp., 4716 Sheffield, Hammond, Ind.

Snow Clearance

391 The Atlas Scraper & Engineering Co., 6203 Maywood Ave., Bell, Calif., provides in their snow dozers a fast, easily operated method of clearing snow from sidewalks, alleys, lanes, or other areas where the use of the large snow plows is impractical. Operated by hand control or hydraulic power, the dozers are available for use with the Farmall-Cub, Massey-Harris Pony, Allis-Chalmers Model G, International Super A and AV, and the John Deere Model M.

Pumps To 4,000 GPM

392 Aurora horizontally split case, double-suction, single-stage, centrifugal pumps, Series Type OD, come in capacities to 4,000 gpm and heads to 300 feet. They may be used for general water supply, handling condenser circulating water, chemical solutions, and irrigation. Write for Condensed Catalog M to the Aurora Pump Co., 66 Loucks St., Aurora, Ill.

Electric Controls Simplify Operations

393 The B/W Controller Corp., 2106 E. Maple Rd., Birmingham, Mich., will send you data on its all-electric floatless liquid level controls, including induction relays, induction relay switches, relay enclosures, contractors and starters, multiple pump controls, electrode holders, starter and relay combinations, and special controls and panels.

Prestressed Concrete For Modern Buildings

394 A time-tested construction technique in the dome-covered tank field has entered the realm of modern building design. If your municipality is planning to construct any buildings which require clear spans 80 to 250 feet in diameter and ceiling heights without interfering trusses or columns and without expensive high side walls, write The Preload Companies, 211 E. 37th St., New York 16, N. Y.

Fog Fire Fighters Carry Own Water Supply

395 The Bean fire fighters carry their own water supply, provide two guns of 30 gallons each at 850 pounds' pump pressure. The advantage of this type of equipment is that the screen action of fog makes entry into burning buildings safer, and water damage is cut to practically nothing. The Bean high-pressure fog fire fighter can be mounted on almost any standard truck chassis. Write the Food Machinery and Chemical Corp., John Bean Div., Dept. 129, Lansing 4, Mich.

(Continued on Page 25)

Up-Right Scaffolds

396 The scaffolds manufactured by the Up-Right Scaffolds Co., 1013 Pardee St., Berkeley 2, Calif., are made of aluminum alloy. Each section is a flat package when folded only 6½ inches thick and weighing about 60 pounds. A single-section unit has a height up to 9 feet.

Detector Meter For Fire Services

397 Information is available from the Hersey Mfg. Co., South Boston, Mass., about its detector meter for fire services, of value wherever dependability, accuracy, and low maintenance costs are of interest.

Motor Grader Features

398 The motor grader manufactured by the J. D. Adams Mfg. Co., Indianapolis, Ind., has eight overlapping forward speeds, high-arch front axle for clearance, push-button starting from the cab, positive mechanical controls, a wide range of blade adjustments, exceptional blade clearance in all operating positions, balanced weight distribution, easy access for fast servicing, and world-wide dealer service.

Good Reflectors Mean Efficient Lighting

399 Alzak reflectors, made entirely of aluminum from the Aluminum Co. of America, 1859 Gulf Bldg., Pittsburgh 19, Pa., require no painting and never rust. These lightweight aluminum standards can usually be erected without the use of a crane. The Alzak process gives a surface treatment which is an integral part of the aluminum reflector shell.

Improved Water Filtration

400 Long filter runs and comparatively little wash water are the two outstanding advantages of Anthrafilt in the removal of bacteria, micro-organic matter, taste, and color. Write for information to the Palmer Filter Equipment Co., 822 E. 8th St., Erie, Pa., representing the Anthracite Equipment Corp., Anthracite Inst. Bldg., Wilkes-Barre, Pa.

Lightweight Tunnel Liner Plates

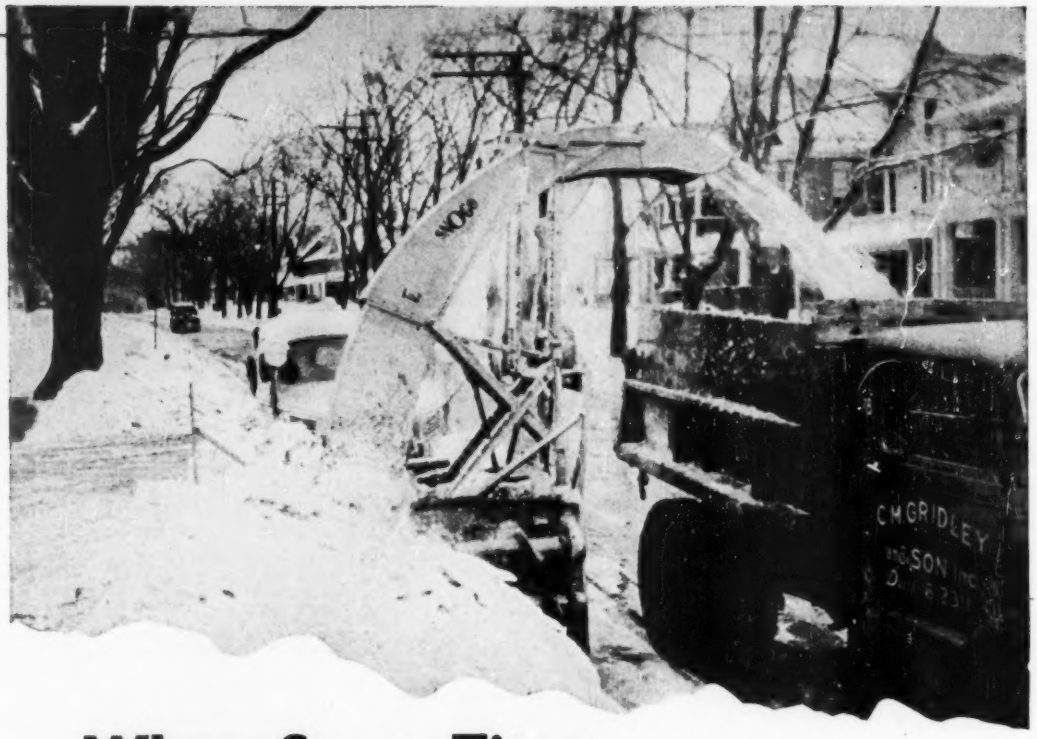
401 The Armco tunnel liner plates require only one workman to carry, hold, and bolt into place, using a structural wrench. The plates may be used for conduits, sewers, and similar structures. Write for complete data to Armco Drainage & Metal Products Inc., 1965 Curtis St., Middletown, Ohio.

Jeep Loader Has Hydraulic Control

402 The Jeep Loader with fingertip hydraulic control may be equipped with a dirt- and sand-bucket that holds 1/3 yard of dirt; a snow and produce scoop that is 6 feet wide, 32 inches deep, and 21 inches high; or a bulldozer blade 6 feet wide and 20 inches high (with a hardened replaceable cutting blade) for scraping, leveling, or cutting. Write for data to the Mahl Equipment Co., Division of Standard Iron and Wire Works, Inc., 2930 North Second St., Minneapolis 11, Minn.

10-Ton Roller Weighs 230 Pounds

403 The Wayne Impactor super-tamps, finishes, and cures 60 to 80 square feet of pavement patching per minute and leaves the paving ready for immediate traffic. Working flush to rails, curbs, and manholes, it impacts hot or cold material in winter or summer without water. A density equal to a 10-ton roller is achieved by means of a heated plate which strikes 700-pound blows at the rate of 7,000 per minute. Write for Bulletin 25-8 to the Wayne Impactor Sales Co., 12 N. Third St., Columbus 15, Ohio.



When Snow-Time Means Time and Money—

It pays to put a Snogo to work on your city streets. Don't just push your snow to the curb, building snow banks to delay traffic and add to the hazards of winter driving. Remove the snow completely. Snogo will throw the snow into a parkway or load it directly into a truck.

Snogo is the fastest known method of loading snow, filling the largest truck in 10 to 20 seconds. Due to the force with which Snogo handles the snow, it compacts the truck to greater capacity than is possible with old fashioned hand labor. Your truck time and costs go down.

Snogo cleans your city streets right down to the pavement and against the curb. It means safer traffic without delays, better business facilities, and is the faster, more economical solution to the problem of city snow removal.

Look into the experience of other cities on their snow problems. We'll be glad to give you all the facts. Drop us a line.

POSITIVELY GUARANTEED to handle any snow condition that will ever occur on any airport

KLAUER MANUFACTURING CO.
DUBUQUE, IOWA

SNOGO A SNOGO For EVERY BUDGET

Your Catalog Supply Service

Please Use Coupon on Page 21

New Low-Cost Snow Loader

404 The Barber-Greene Model 522 snow loader is self-propelled, self-feeding, one-man operated, and removes snow at the rate of 5 yards per minute. It can be converted to an all-season bucket loader at negligible cost. Write for 8-page brochure to the Barber-Greene Co., Aurora, Ill.

Cut Grass With Power Scythe

405 The new Jari power scythe, manufactured by Jari Products Co., 2938 Pillsbury Ave., Minneapolis, Minn., cuts grass, weeds, and underbrush quickly and economically and is handled by one man; 5 quarts of gasoline run the machine for eight hours, cutting 4 to 6 acres. Both ends of the sickle bar are open, so that the machine trims closely around walls, posts, and other fixed objects, and cuts clean under fences or guard rails. By pushing down on the handles the blade may be raised to go over low obstructions.

Liquid Meters

406 The Worthington-Gamon Meter Co., 296 South St., Newark 5, N. J., will send you data about its full line of liquid meters, available in all sizes and types.

Half-Yard Shovel Resists Side-Sway

407 The Koehring 205 half-yard pull shovel, which has a digging reach of 15 feet 3 inches, is constructed with the pull shovel mounted on the crowd-shovel boom—the front end will not weave, assuring a straight, clean ditch. Write for an illustrated catalog to the Koehring Co., Milwaukee 10, Wis.

Bore Holes for Pipe

408 From an operating trench about 3½ by 8 feet, the Hydrauger bores clean open holes as far as 225 feet, eliminating costly trenches, pavement damage, backfilling, interference with traffic. Models may be obtained which bore from 2- to 24-inch-diameter holes. Write for Catalog No. 8, the Hydrauger Corp., Ltd., 681 Market St., San Francisco 5, Calif.

Clean Sewers from Street Level

409 With the Flexible power bucket machines, sewers are cleaned with all personnel on the street level. Write for information about the method and the equipment to the Flexible Sewer-Rod Equipment Co., 9059 Venice Blvd., Los Angeles 34, Calif.

Gas Drip Can't Hurt This Pavement

410 Jennite J-16, a surface seal coat that prevents damaging action of gasoline and oil, oxidation, freezing, and thawing of penetrated moisture, eliminates all surface maintenance problems due to deterioration. J-16, manufactured by Maintenance, Inc., Wooster, Ohio, may be used on streets, alleys, driveways, airfield aprons and runways, playgrounds, floors, and curbs.

Reduce Accidents With Traffic Signs

411 Traffic signs help to minimize traffic accidents by letting the driver see what dangers lie ahead. Write for information about the signs manufactured by Standard Signs, Inc., 3199 E. 65th St., Cleveland 4, Ohio. Catalog No. C-2 describes the tripod signs 15 by 15 inches and the school, traffic, and parking signs in sizes of 24 inches square, and 12 by 18 inches.

Trucks In Every Size

412 Light, medium, and heavy-duty trucks, powered by gasoline and diesel, are manufactured by the General Motors Corp., Detroit, Mich.; write for information about this line available in styles and sizes for every type of municipal hauling job.

Filter Plant Gauges

413 The Simplex Valve & Meter Co., 6789 Upland St., Philadelphia 42, Pa., manufactures gauges for measurement of filter rate of flow and loss of head, observation of wash water flow or wash tank depth, determination of degree of sand expansion, and indication and recording of clear well or settling basin water levels.

Install Large Gate Valve Under Pressure

414 The A. P. Smith Mfg. Co., East Orange, N. J., will send you information about the installation under pressure of gate valves as large as 48 inches without interruption of service or reduction in pressure. The company also makes check and inserting valves, fire hydrants, tapping sleeves and valves, water service brass goods, and tapping, inserting, pipe cutting, and corporation tapping machines.

Portable Asphalt Plant For Paving Maintenance

415 The White portable asphalt plant, for patching or resurfacing of asphalt, brick, concrete, and macadam, produces for immediate hot application, or makes a mix for deferred cold laying. It contains an internally fired, rotating dryer, pugmill mixer, bituminous heating kettle, volumetric measurement, and air controls, and is available in capacities of 4, 8, 12, or 25 tons per hour. Write for a catalog to the White Mfg. Co., Elkhart, Ind.

Traffic Controls Control Big Cities

416 The Marbelite Co., Inc., 26 Warren St., New York 7, N. Y., will send data describing how one city has provided fast movement for its citizens by installing an efficient system of traffic lights and controllers.

Locate Leaks Without Digging

417 The Geophone discs, placed on the ground, will pick up the sound of a leak in water or steam pipes located as much as fifty feet away. Surveys and unnecessary excavations are eliminated. Write for information to the Globe Phone Mfg. Corp. Dept. Y, Reading, Mass.

Selective Signaling For Police, Emergency Cars

418 The Motorola Quik-Call selective signaling equipment permits the calling of all cars or up to 1,350 individual cars with the 24-key system. This equipment is designed to prevent your cars from receiving calls sent by other transmitters on the same or adjacent channels; interference from diathermy is locked out during standby, as well as skip interference, false calling, and squelch opening. Write for a descriptive booklet to the Communications Division, Motorola, Inc., 4545 West Augusta Blvd., Chicago 51, Ill. Address Dept. A.C.

Kill Odors

419 In rest-rooms, or wherever unpleasant odors occur, Nuo-Spray does a quick job of dissipating them. The chemical has a fresh odor of its own that disappears when the neutralizing agents have reduced odor-bearing vapors to odorless compounds. Write to Dept. AC1148, The E. M. Reynolds Co., Westport, Conn.

Street Lighting Refractors to Fit the Traffic

420 Holophane refractors are designed not only to fit various types of lamps, but also to provide the right type of light for various types of streets—business and residential streets, and traffic arteries. Write the Holophane Co., Inc., Street Lighting Dept., Newark, Ohio.

A Clean-Swept City With Power Sweepers

421 The Wayne motor sweeper cleans streets by first releasing thin streams of water to wet down dust and dirt. A brush then spindles the dirt into a hopper. Write for *A Clean Sweep* to the Wayne Motor Sweeper Div. of Brown-Bevis Co., 4900 Santa Fe Ave., Los Angeles 11, Calif.

Carryable Generator

422 The Homelite carryable gasoline-engine-driven generator may be used for floodlights, for operating time-saving electric tools, etc. Write for data to the Homelite Corp., 111 Riverdale Ave., Port Chester, N. Y.

Prevent Tanks from Rusting

423 By employing the basic principle of electroplating, Rusta Restor maintains tanks in a neutral condition that prevents rusting. The process is inexpensive to install and maintain. Write for a catalog to the Rusta Restor Div. of The Johnston & Jennings Co., 861 Addison Road, Cleveland 14, Ohio.

Automatic Parking Meter Easy to Operate, Maintain

424 The Karpark requires only the insertion of a coin: no handles, no levers to pull. Violations are conspicuous. Modern design also makes collection and servicing rapid. Write for information to the Karpark Corp., Cincinnati 6, Ohio.

Extinguish Fires Fast

425 One example of the efficacy of the portable Ansul 30 extinguisher is the fact that with the use of this apparatus a dangerous gasoline-truck fire was extinguished in a few seconds. Write for data about this dry chemical to the Ansul Chemical Co., Marinette, Wis.

Cut Asphalt Costs On Small Mix Jobs

426 The Foote Kinetic asphalt mixer is portable, can be towed behind any truck or car, handles any cold mix without additional equipment, and can handle hot mixes in conjunction with kettles. The capacity is 3 cubic feet in 30 seconds. Ask for Bulletin K-100, The Foote Co., Inc., 1958 State St., Nunda, N. Y.

Protect Your City With Up-to-Date Fire Alarms

427 Delay in getting to a fire is one of the greatest causes of fire loss. And one of the biggest factors in assuring prompt arrival is an efficient network of fire-alarm boxes. Write for data to the Gamewell Co., Newton Upper Falls 64, Mass.

No Accidents With This Paving Breaker

428 Gardner-Denver's B87 paving breaker is designed with a safety latch that enables the operator to move the breaker safely without shutting off the air in the line and assuring the impossibility of accidental opening of the throttle. Write for complete information to the Gardner-Denver Co., Quincy, Ill.

Avoid Curb-and-Gutter Peeling

429 Easterners troubled with curb-and-gutter peeling as a result of the use of salt in snow-removal practices will find of particular use Bulletin No. 7, available from the H. E. Fletcher Co., West Chelmsford, Mass., manufacturers of Granite. Another advantage of Granite is that it reflects light, so that highway boundaries are clearly defined. Granite curb does not wear out, and if the highway is widened or relocated, it may be re-used.

(Continued on Page 26)

✔ VICTIMS RESCUED
✔ FIRES OUT
✔ FIREMEN ALIVE and WELL

thanks to Chiefs who Specify

"Scott Air-Pak"

Fire Departments using *Scott Air-Pak* build enviable records for life and property conservation!

Fire Departments throughout the nation safely rely on Scott *Air-Pak* to locate and save persons trapped by smoke. Property loss, too, is reduced as fire fighters, safely protected from dense smoke and fumes, locate the fire and fight it at its source.

Scott *Air-Pak* is the *safe, proven* way to fight fires!

Scott *Air-Pak* Back-Pak (above) — ½ hour minimum duration at extreme exertion. Weight as worn 29½ lbs. B. of M. approval No. 1308.

OVER 1000 FIRE DEPARTMENTS NOW USING *Scott Air-Pak*

Over 1000 municipal and industrial fire departments use Scott *Air-Pak* — proof that it is safer, more economical and completely dependable. Special *Air-Pak* features include: cool, fresh AIR (not oxygen); demand-type regulator that can't be "outbreathed"; full-view mask permitting conversation.

FREE INFORMATION BOOKLET

Get the full story of Scott *Air-Pak* equipment—also arrangements for FREE DEMONSTRATION. Write for *Bulletin No. 510* and name of nearest distributor—today!

ESTABLISHED IN 1932
Scott
FOR SAFETY - FOR SERVICE

Departments now using Air-Paks send for free wall chart showing construction details.

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

191 ERIE ST. LANCASTER, N. Y.

For You — Free

Please Use Coupon on Page 21

Chemical Equipment For Water, Sewage Conditioning

430 The Chemical Equipment Co., 1700 No. Main St., P. O. Box 3098, Terminal Annex, Los Angeles 54, Calif., manufactures Chemco chlorinating equipment for sewage plants and swimming pools, and chlorinators and water-conditioning equipment for water works.

Prolong the Life of Fire Hose

431 The Circul-Air fire hose dryer, by shortening hose-drying time, prevents mildew and rot, since it air conditions the hose as it dries it. For a booklet about this method of adding to the life span of your fire department's fire hose, write the Circul-Air Corp., 575 E. Milwaukee St., Detroit 2, Mich.

Elevated Tanks From 5,000 to 2,000,000 Gals.

432 The Chicago Bridge & Iron Co., 2127 McCormick Bldg., Chicago 4, Ill., will send you information about its Horton elevated tanks, in sizes from 5,000 to 2,000,000 gallons. Among the styles available are a radial-cone bottom, ellipsoidal bottom, and many others to assure lowered pumping costs, uniform pressures, and a dependable supply.

Maintain Pump Efficiency

433 The De Laval labyrinth wearing ring maintains high pump efficiency, since the effectiveness of the ring depends on the flow-retarding action of labyrinthine passages rather than on the maintenance of close clearances. Write for data to the De Laval Steam Turbine Co., Trenton 2, N. J.

Curb-and-Gutter Paver Lays Any Curb Shape

434 The Dotmar mechanical curb-and-gutter paver does a minimum of 5 lineal feet per minute and can lay curves (100 feet min. rad.) and grades up to 20%. This machine eliminates face forms and division plates, or a slight alteration in the division plates permits their use when specified. Write for Bulletin 48, Dotmar Industries, Inc., 511 Hanselman Bldg., Kalamazoo 1, Mich.

Automatic Operation On These Parking Meters

435 Choice-of-coin Dual parking meters provide for accumulative time and operate automatically. These features, added to the fact that the mechanism is a completely packaged unit, permit the meter to operate with a minimum of maintenance. They are all weather- and tamper-proof. Write for a bulletin to the Dual Parking Meter Co., Milford Bldg., Canton 2, Ohio.

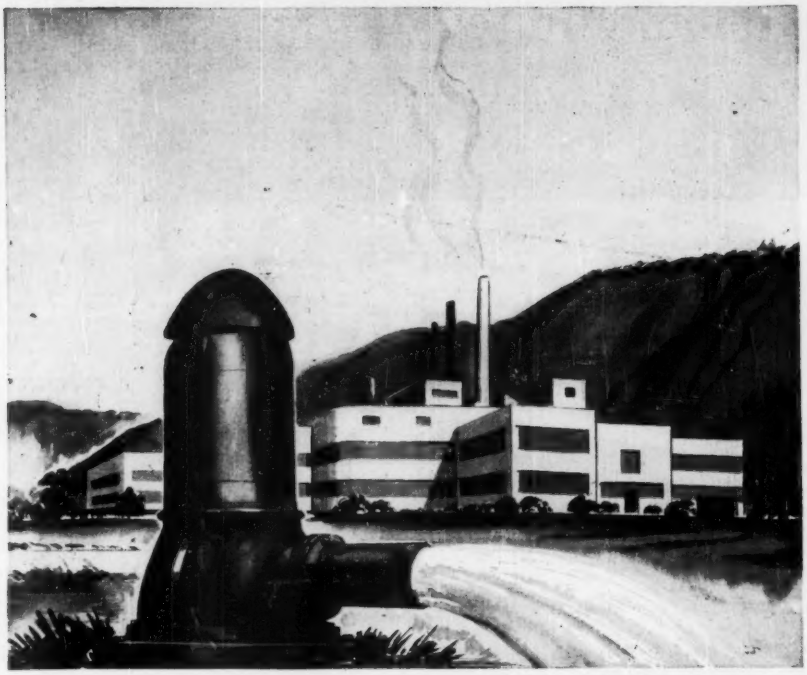
New Pump Series From Fairbanks-Morse

436 Fairbanks, Morse & Co., Chicago 5, Ill., has added a new line of pumps. The Figure 5520A line of side-suction centrifugal pumps are open-impeller, ball-bearing, and designed for operation at heads up to 80 feet and capacities to 2,500 gpm; they range in size from 2 through 8 inches and are available for either direct drive from motors or engines, or from belt drives.

A New Flow Meter

437 Those who are constantly alert to new ideas that will improve the measurement or control of liquid flow through a pipe or conduit will find the "Bethlehem Flow Tube" folder valuable. This describes a new device that offers a negligible resistance to flow, that avoids the cost of expensive masonry vaults often required for other installations, and provides a greater range of measurement. Write to the Bethlehem Foundry and Machine Co., Bethlehem, Pa., for your copy.

(Continued on Page 28)



Better Designed

...MORE RUGGEDLY BUILT!

There are some mighty good reasons why so many cities and industries use Layne Well Water Systems exclusively. Two of these reasons are:—finer design for higher efficiency and extra rugged construction to assure longer life.

VERTICAL TURBINE *PUMPS, designed and built by Layne are available in sizes from 40 to 15,000 gallons per minute. Write for pump catalog.*

Every part of a Layne Well Water System is severely tested for accuracy, strength and quality. Where strain is heaviest, extra strength has been added. To excessive points there is more toughness.

All in all your Layne Well Water Systems are as fine as modern skill and advanced engineering can create. Their reputation for extraordinarily satisfactory service under any and all conditions is world known.

LAYNE WELL WATER SYSTEMS

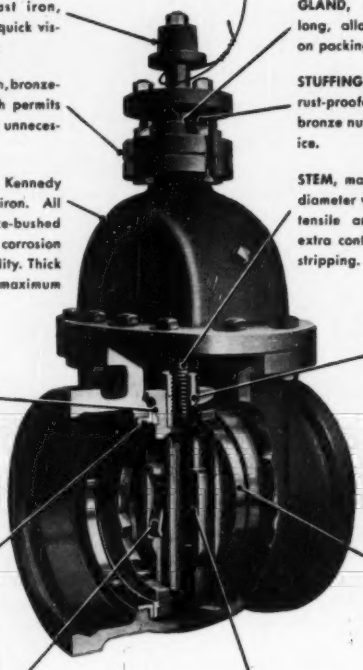
If you are in need of more water, a Layne engineer may be called in without cost or obligation. For literature address

LAYNE & BOWLER, INC.
General Offices
MEMPHIS 8, TENN.

AFFILIATED COMPANIES—Layne-Arkansas Co., Stuttgart, Ark. ★ Layne-Atlantic Co., Norfolk, Va. ★ Layne-Central Co., Memphis, Tenn ★ Layne-Northern Co., Mishawaka, Ind ★ Layne-Louisiana Co., Lake Charles, La. ★ Louisiana Well Co., Monroe, La. ★ Layne-New York Co., New York City ★ Layne-Northwest Co., Milwaukee, Wis. ★ Layne-Ohio Co., Columbus, Ohio ★ Layne-Pacific, Inc., Seattle, Wash. ★ Layne-Texas Co., Houston, Texas ★ Layne-Western Co., Kansas City ★ Layne Minnesota Co. Minneapolis, Minn ★ International Water Corporation, Pittsburgh, Pa. ★ International Water Supply, Ltd., London, Ontario, Canada ★ Layne-Hispano Americana, S. A., Mexico, D. F.

Dependable Performance is designed *into* this KENNEDY Valve

KENNEDY IRON BODY DOUBLE DISC GATE VALVE
FIG. 56, 16 in. A.W.W.A. Standard, bell-end, non-rising stem. Working pressure: 3 in. thru 60 in.; water, 150 lb. per sq. in.



OPERATING NUT, cast iron, large, well-marked for quick visual check of operation.

STUFFING BOX, cast iron, bronze-bushed, generous depth permits ample packing without unnecessary tightness.

BONNET (and body), Kennedy Higher-Strength cast iron. All bearing surfaces bronze-bushed or bronze-faced for corrosion resistance, extra durability. Thick metal throughout for maximum strength.

DISC RINGS, bronze, each with accurately formed tongue forced into dovetailed groove in disc under heavy pressure for solid, leakproof joint.

SEAT RINGS, heavy bronze, threaded and screwed into body, removable, interchangeable, easily replaced when necessary.

WEDGES, bronze, interchangeable. Combination of bronze wedges, bronze seats, cast iron hooks prevents corrosion trouble in mechanism.

GLAND, bronze-bushed, extra long, allows maximum take-up on packing.

STUFFING BOX BOLTS, tee-head, rust-proofed steel, with durable bronze nuts, give long-lived service.

STEM, manganese bronze, large diameter with exceptionally high tensile and torsional strength, extra contact threads to prevent stripping.

STEM NUT, manganese bronze, operates independently, prevents stem from binding, springing or bending... fits into disc tops and releases one before the other to prevent sticking or locking on opening.

DISCS, Kennedy Higher-Strength cast iron, with bronze wedge seats, discs deeply ribbed to eliminate distortion.

HOOKS, cast iron, extremely heavy, arrested by stops at bottom of valve body, hold wedges stationary to force discs tight against valve seat.

WRITE FOR BULLETIN 59

THE **KENNEDY** VALVE MFG. CO.
1030 EAST WATER ST.
ELMIRA, NEW YORK
VALVES • PIPE FITTINGS • FIRE HYDRANTS

OFFICE-WAREHOUSES IN NEW YORK, CHICAGO, SAN FRANCISCO • SALES REPRESENTATIVES IN PRINCIPAL CITIES

For You — Free

Please Use Coupon on Page 21

Balance Pump Operation Of As Many As 18 Circuits

438 The Selectrol closely balances total pump capacity with rate of inflow at each operating level, for either rising or falling level cycles, and can handle up to 18 circuits singly or in combination for any float travel up to 40 feet. The "lost-motion clutch" balances pumps of unequal capacity without hunting. Write for Bulletin S-7, Automatic Control Co., 1015 University Ave., St. Paul 4, Minn.

Three Types of Meters

439 The Badger Meter Mfg. Co., Milwaukee 10, Wis., manufactures meters ranging in size from ⅝ inch to 12 inches in disc, compound, and turbine types. The company will send you its *New Badger Chart No. 689*, a practical plan for your meter-storage rack.

Compact Standard For Emergency Signs

440 The Bartlett tripod standard folds compactly for carrying, but is sturdy enough to stand up under comparatively strong winds. The 4-foot automatic-type standard has locking cam for the tripod legs, and an 18-by-18-inch metal sign. Catalog No. 30 includes a list of the sample stock wordings; write the Bartlett Mfg. Co., 3003 E. Grand Blvd., Detroit, Mich.

Keep Swimming Pools Clean and Sanitary

441 Bull Frog Saf-T-Klenz removes rust stains, lime deposits, soap oil, body grease, and algae formation, leaving floors and decks clean and virtually slip-proof. This substance is sprinkled on a damp surface, scrubbed or mopped lightly, and then flushed with water. Write for a free sample to the Berman Chemical Co., 715 Superior St., Toledo 4, Ohio.

Single-Cylinder, 4-Cycle Gasoline Engines

442 The Briggs & Stratton Corp., Milwaukee 1, Wis., manufactures single-cylinder, 4-cycle gasoline engines for such tasks as providing portable power for pumping, for supplying emergency power for electric generator sets, for powering various pieces of construction and maintenance equipment.

Vacuum-Clean Leaves

443 The Utility vacuum cleaner for small areas and the Vacuum leaf loader for larger areas pick up wet or dry leaves by suction. The machines are constructed to eliminate flying dust and to make a clean sweep of the streets' debris. Write for descriptive bulletins to the Leaf Loader Div., American Structural Steel & Tank Co., 21050 W. 8 Mile Road, Detroit 19, Mich.

Control Tastes and Odors In Water Supply

444 Full details explaining the chlorine-dioxide treatment to eliminate the possibility of tastes and odors during chlorination of water supplies may be obtained by writing the Mathieson Chemical Corp., 60 E. 42nd St., New York 17, N. Y. The basic principle is prechlorination of water; then the elimination of tastes and odors due to algae and other organic matter with chlorine dioxide, which oxidizes objectionable compounds formed during chlorination.

Hand-Chased Bronze For Memorials

445 Hand-chased bronze is traditional for memorial tablets. Newman Brothers, Inc., 659 W. 4th St., Cincinnati 3, Ohio, will send you its catalog describing the line of tablets as well as data on bronze, aluminum, or stainless steel doors, railings, gates, and grilles.

(Continued on Page 30)

Just press a button to call your cars—individually, or by groups

Now you can control and direct calls to your fleet, or to any one car in your fleet with the new Motorola "QUIK-CALL" selective signaling equipment! Your cars can be called only by *your* base station. Another "FIRST"—Motorola "Quik-Call" prevents your cars from receiving calls sent by other transmitters on the same or adjacent channels...they need not hear any calls except those coded from your station alone. Interference from diathermy is completely locked out during standby and, most important, skip interference false calling and squelch opening is eliminated.

Motorola "QUIK-CALL" prevents nuisance interference from stations in nearby communities, reducing driver fatigue and increasing the utility of any radio system.

Developed after two and one half years of exacting research, Motorola "QUIK-CALL" is based upon the use of a pure tone generator of instrument precision, called the Vibrasender, and a responding resonant responder—called the Vibrasponder. These "electro-mechanisms" in various combinations, are capable of calling your fleet (with the single-key system) or of selectivity calling up to 1,350 individual units (with the 24-key system) with the precision and speed of adding machine operation.

A product of Motorola Research Laboratories

Motorola "QUIK-CALL" can be added to your present *Motorola* equipment

It doesn't matter whether you're installing a whole new communications system, or if you already have 2-way radio...the Motorola "QUIK-CALL" can be adapted to your system in bringing it up to date. Enjoy the advantages of this new kind of 2-way radio.

FREE!

GET THE COMPLETE DETAILS
DESCRIPTIVE BOOKLET
MAIL THIS COUPON TODAY

COMMUNICATIONS DIVISION
4545 West Augusta Boulevard
Chicago 51, Illinois Dept. A.C.

Please mail me a FREE copy of the descriptive booklet on Motorola "QUIK-CALL" selective signaling equipment.

Name .....Position.....

Address.....

City.....Zone.....State.....

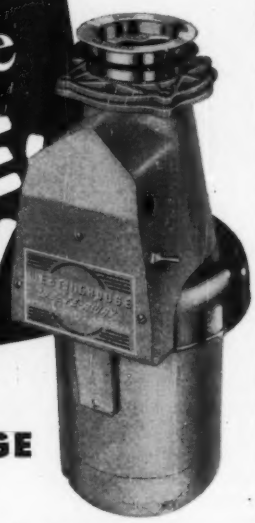
Our Goal and Yours

BETTER COMMUNITIES

Each installation of a Waste-Away, electric garbage disposer, in your community means one less stop for garbage collectors. At today's high cost of municipal servicing, it's a point to consider.

In test after test, in city after city, experts are proving that electric garbage disposers put little extra burden on sewage systems. So, why not encourage their use? A community rid of old-fashioned garbage cans is a safer, cleaner, finer place in which to live.

Westinghouse WASTE-AWAY



ELECTRIC GARBAGE DISPOSER

WESTINGHOUSE ELECTRIC CORPORATION
Plants in 25 cities... Offices Everywhere
Appliance Division • Mansfield, Ohio

YOU CAN BE SURE..IF IT'S Westinghouse

For You — Free

Please Use Coupon on Page 21

The How and Why of Chlorine

446 A new technical manual, *Chlorine*, issued by the Columbia Chemical Div., of the Pittsbugh Plate Glass Co., Fifth and Bellefield, Pittsburgh 13, Pa., presents charts and photographic illustrations to show the study of the properties, uses, and objectives attained through the utilization of this chemical.

Easy Loading, Quick Dumping From This Refuse Body

447 The Hydropaka, manufactured by the Marion Metal Products Co., Marion, Ohio, is a garbage collection body that is easy to load and unload. Available with a 9- or 12-yard capacity, it has a large sliding door opening on each side of the body that is wide enough to take bulky containers. A packing plate travels from the door openings to the rear, compressing and packing the refuse. And the body has a door at the rear out of which the packing plate pushes the compressed refuse.

pH and Conductivity Control In Water and Power Plants

448 The Brown Instrument Co., Wayne & Roberts Aves., Philadelphia 44, Pa., will send you a 43-page booklet, Catalog 15-12, discussing the fundamentals of pH, oxidation-reduction potential, and conductivity, and describing such of its instruments as the Electronik Potentiometer, flow electrode assembly, the Beckman pH amplifier, electrodes, conductivity cells, control valves, motors, and pneumatic-control accessories.

New Lubricated Plug Valve

449 A new reference book, No. 39, has just been issued by the Homestead Valve Mfg. Co., Coraopolis, Pa., covering the Homestead-Reiser Self-Seald lubricated plug valves, designed to operate at 150 psi for use in various municipal utility plants. The bulletin offers general catalog data, descriptions, specifications, and prices of the units, parts, and accessories.

New International Harvester Booklet

450 A new 24-page illustrated booklet has been issued by the International Harvester Co., 180 North Michigan Ave., Chicago 1, Ill., that presents the design features, specifications, and work capacities of six diesel engines having ratings from 39 to 180 hp. A "work it will do" table provides a convenient listing of engine capacities in operating rock crushers, generators, hoists, sawmills, and pumps.

Reconditioned Pipe Gives Added Service

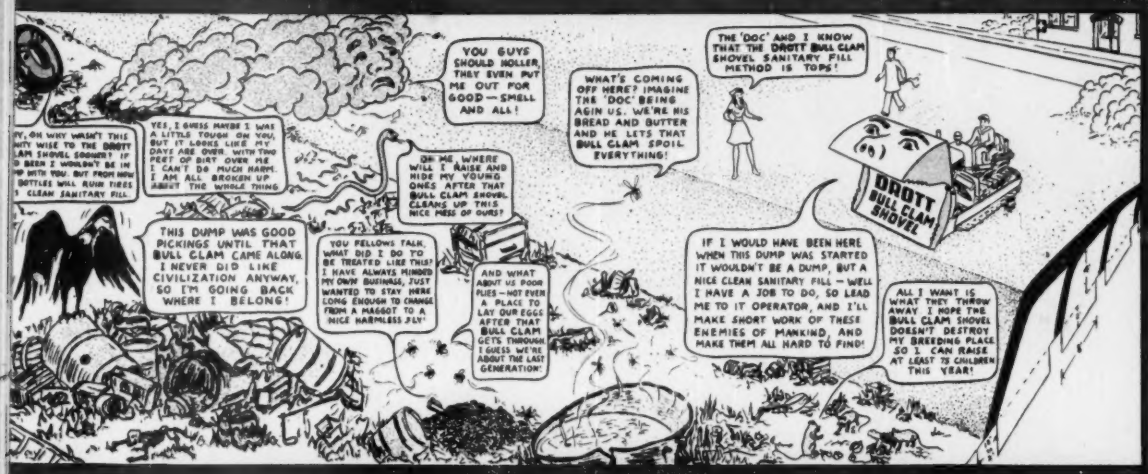
451 Centriline Corp., 140 Cedar St., New York 6, N. Y., will send you a bulletin describing the many advantages of pipe reconditioning. Your old water mains, 24 inches in diameter or larger, can be hydraulically cleaned and centrifugally lined with cement mortar in place, insuring maximum carrying capacity, permanently sustained, and freedom from corrosion and leakage.

Rollers For Every Purpose

452 The Lewis-Browning Mfg. Co., 111 Humble Ave., P. O. Box 2707, San Antonio 6, Texas, will send you information about its complete line of compaction rollers: Pierce Bear tandem rollers (which come in three sizes, and the BMCO pneumatic-tired and Sheeps Foot rollers.

Bronze and Brass Add Life To Hydrants and Fountains

453 Little trouble and comparatively low original and maintenance costs are the result of bronze and brass precision-machined and finished parts in the Murdock yard hydrants and outdoor drinking fountains. Write for data to the Murdock Mfg. & Sup. Co., 426-430 Plum St., Cincinnati 2, Ohio.


...OH WHY WASN'T THIS CITY WISE TO THE DROTT BULLCLAM SHOVEL SOONER? IF I'D BEEN I WOULDN'T BE IN A FIX WITH YOU. BUT FROM NOW ON BOTTLES WILL RUIN TIRES & CLEAN SANITARY FILL
YES, I GUESS MAYBE I WAS A LITTLE TOUGH ON YOU, BUT IT LOOKS LIKE MY DAYS ARE OVER. WITH TWO FEET OF DIRT OVER ME I CAN'T DO MUCH HARM. I AM ALL BROKEN UP ABOUT THE WHOLE THING
THIS DUMP WAS GOOD PICKINGS UNTIL THAT BULL CLAM CAME ALONG. I NEVER DID LIKE CIVILIZATION ANYWAY, SO I'M GOING BACK WHERE I BELONG!
YOU GUYS SHOULD HOLLER, THEY EVEN PUT ME OUT FOR GOOD — SMELL AND ALL!
OH ME, WHERE WILL I RAISE AND HIDE MY YOUNG ONES AFTER THAT BULL CLAM SHOVEL CLEANS UP THIS NICE MESS OF OURS?
YOU FELLOWS TALK. WHAT DID I DO TO BE TREATED LIKE THIS? I HAVE ALWAYS MINDED MY OWN BUSINESS, JUST WANTED TO STAY HERE LONG ENOUGH TO CHANGE FROM A MAGGOT TO A NICE HARMLESS FLY!
AND WHAT ABOUT US POOR FLIES — NOT EVEN A PLACE TO LAY OUR EGGS AFTER THAT BULL CLAM GETS THROUGH. I GUESS WE'RE ABOUT THE LAST GENERATION!
WHAT'S COMING OFF HERE? IMAGINE THE 'DOC' BEING AGIN US. WE'RE HIS BREAD AND BUTTER AND HE LETS THAT BULL CLAM SPOIL EVERYTHING!
THE 'DOC' AND I KNOW THAT THE DROTT BULL CLAM SHOVEL SANITARY FILL METHOD IS TOPS!
DROTT BULL CLAM SHOVEL
IF I WOULD HAVE BEEN HERE WHEN THIS DUMP WAS STARTED IT WOULDN'T BE A DUMP, BUT A NICE CLEAN SANITARY FILL — WELL I HAVE A JOB TO DO, SO LEAD ME TO IT OPERATOR, AND I'LL MAKE SHORT WORK OF THESE ENEMIES OF MANKIND, AND MAKE THEM ALL HARD TO FIND!
ALL I WANT IS WHAT THEY THROW AWAY. I HOPE THE BULL CLAM SHOVEL DOESN'T DESTROY MY BREEDING PLACE SO I CAN RAISE AT LEAST 12 CHILDREN THIS YEAR!

Pests object!... pests are the only inhabitants of a city that resent the Drott Bullclam Shovel Method of Sanitary Fill

Pests speak their mind in this composite cartoon ... tell what they think about the clean, sanitary fill being built with a Drott Bullclam Shovel. Well they might object — feeding, living and breeding sites for these undesirables are eliminated by this method. All refuse is dumped into trenches thoroughly compacted, covered daily — there's no harboring places for mosquitoes, rats, maggots . . . no flies, no annoying odors. Instead — a clean, landscaped lot that can be used for a park or playground — like completed area at right.

Make living in your community pleasant, healthful . . . by closing the open dump . . . the Drott Bullclam Shovel way.

LIKE A LANDSCAPED LOT!

A completed Sanitary Fill built with Drott Bullclam Shovel is more like a landscaped lot than a refuse area! This unit performs all operations — digging trenches, compacting, covering — no other equipment needed.

Operated by DROTT POSITIVE CLOSED HYDRAULIC SYSTEM • SMOOTH • QUICK • DEPENDABLE. Keeps dirt and air out . . . keeps oil in! Used successfully on Drott equipment for many years.

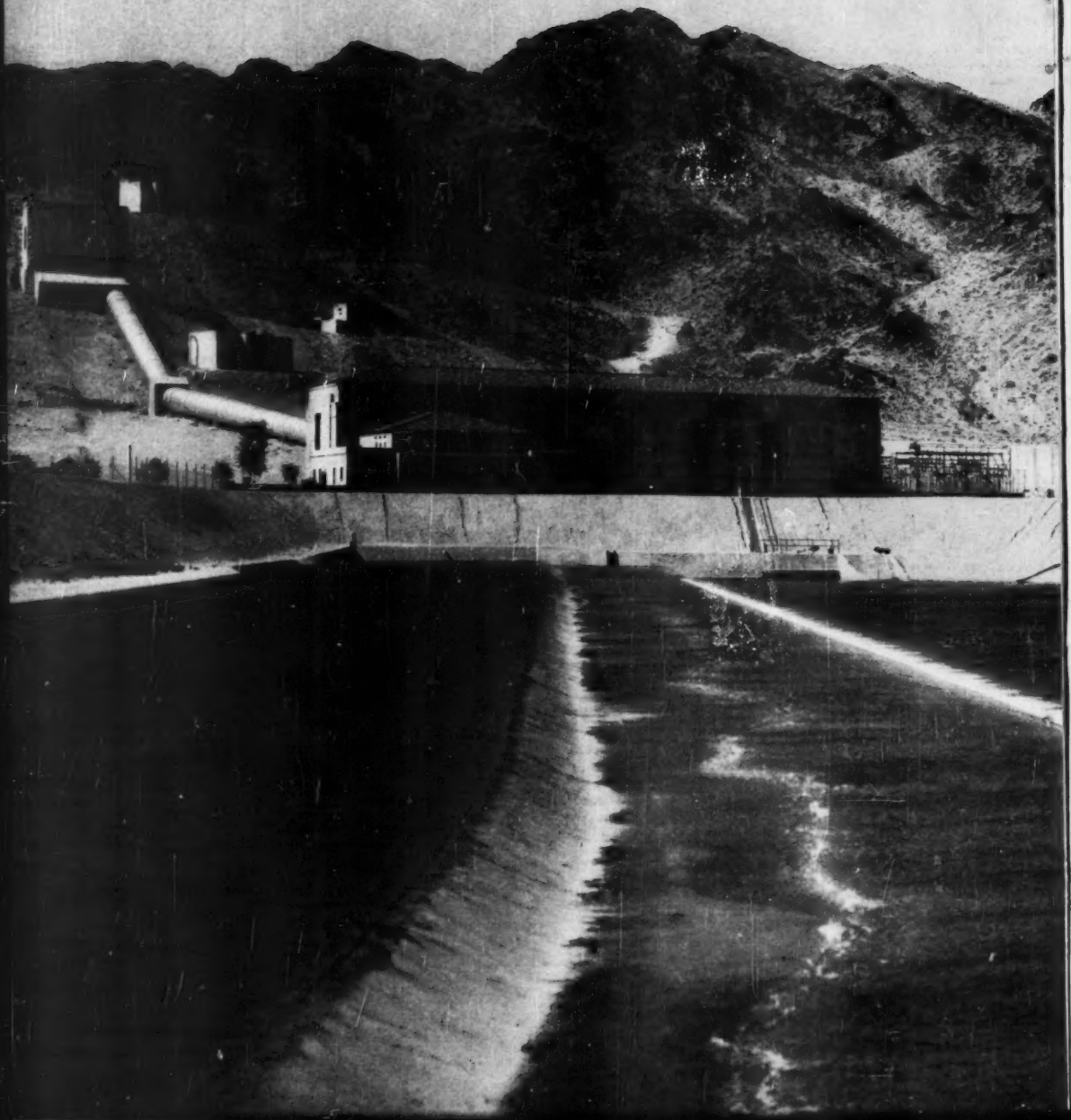
FREE

On request; descriptive catalog and list of cities using Drott method. Also cost data on collection and sanitary fill equipment.

DROTT
EQUIPMENT

DROTT MANUFACTURING CORP.
3841 W. WISCONSIN AVENUE • MILWAUKEE 8, WISCONSIN

Water...481 Miles



from Home!

Southern California Water Supply Depends on Reliable Allis-Chalmers Equipment

HAULING WATER over and through mountains for 481 miles is an enormous task. Yet, that's the length of the longest pipeline of the Metropolitan Water District of Southern California. Bringing water from the Colorado River to the homes and businesses of Southern California has made possible the rapid growth of that area.

Included in this gigantic system are 45 mountain tunnels, 7 reservoirs, 5 pumping stations, water softening plant, filtration plant and hundreds of miles of acqueducts and pipelines. Today the system efficiently serves Los Angeles and 20 neighboring communities having a combined population of over 3,000,000.

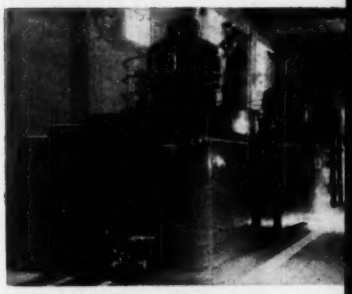
The Iron Mountain Pumping Station (shown here) is Allis-Chalmers equipped. Three 90,000 gpm pumps, operating against a 144 ft head, force water into a tunnel in the mountain. Specifications demanded 88 percent efficiencies from pumps but all A-C units tested 91.3 or better. Three vertical synchronous motors of 4300 hp each drive the pumps. All A-C equipment, operating since 1939, have delivered reliable service.

The same kind of fine equipment engineering that went into the pumps and motors of this great system is available for your community, whether large, medium or small. Today, Allis-Chalmers offers you the world's widest range of public works equipment. For additional information call your nearest A-C office or write direct.

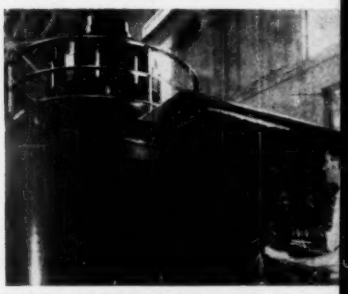
A 2600

ALLIS-CHALMERS, 1185A SO. 70 ST.
MILWAUKEE, WIS.

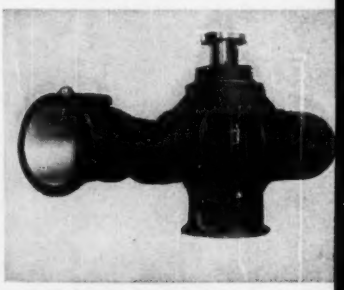
A-C Provides Pumps and Motors for Southern California Pump Station



SYNCHRONOUS MOTORS, 4300 hp each, are of rectangular design, accommodate cooling coils. Housings protect against entrance of sand and dust.



GAUGE CABINET for indicating cooling water and oil condition of motor. Cooling is accomplished by fans which recirculate the air within the motor.



GIANT PUMPS are rated 90,000 gpm and are designed with a 48 in. discharge. The impellers measure 78⅛ in. and are driven by 20 in. shafts.

ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment—Biggest of All in Range of Industrial Products

When headlines say

RECORD SNOW FALL

Meet the Emergency with

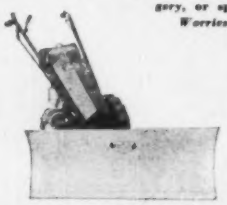
GRAVELY POWER EQUIPMENT

Cities find that the GRAVELY'S powerful 5 Horsepower Tractor with the HD Snow Plow Blade or its Rotary Brush solve the snow removal problem in those hard-to-get-to places . . . easily, inexpensively.

Parking meters and other obstructions are no trouble to the compact GRAVELY. Easily maneuverable, with direct gear drive and reverse, the GRAVELY clears snow away in minutes instead of hours.

Does away with hand labor—year 'round use. Get a demonstration of the GRAVELY Tractor with its 17 year-round attachments.

Write today for **FREE** *catalog, Power vs. Drudgery, or special snow removal booklet, No Worries when Snow Flurries.*



GRAVELY

Motor Plow and Cult. Co.

BOX 73

DUNBAR, W. VA.

NATION WIDE

Sales and Service

Stewart Chain Link Wire Fence is available in several heights, weights and styles to meet the degree of protection desired.

● **Stewart Chain Link Wire and Plain or Ornamental Iron Fences and Entrance Gates** are made in a sufficiently wide range to adequately cover the fencing requirements of all classes of public property.

DON'T OVERLOOK STEWART

If your plans call for Iron or Wire fencing

Stewart Plain or Ornamental Iron Fence is made in a wide

variety of designs for all classes of public property.

Stewart All Steel Settee—Durable, attractive—in 4', 5' and 6' lengths.

In addition to fence, Stewart produces many other iron, wire and bronze products for the protection and beautification of public property. Catalog sent on request: when writing, mention products in which you are interested.

Stewart IRON and WIRE FENCES

THE STEWART IRON WORKS CO., INC.

1521 Stewart Block

CINCINNATI 1, O.

Experts in Metal Fabrications since 1886

DIXIE TANK AND BRIDGE CO

3523 LAMAR AVE.—P. O. BOX 14, MEMPHIS 1, TENNESSEE

Representatives in the Following Cities:

SALT LAKE CITY, UTAH Box No. 1202	GREENVILLE, S. C. Box No. 1074	COLUMBIA, S. C. Box No. 472	COLUMBIA, MO. Box No. 522
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RALEIGH, N. C. Box No. 251	RICHMOND, VA. Box No. 886	DENVER, COLO. Box No. 2037	MACON, GA. Box No. 402
SYRACUSE, N. Y. Box No. 681	NEWARK, OHIO Box No. 623	WAUSAU, WIS. Box No. 682	PROVIDENCE, R. I. Box No. 202
BUTTE, MONT. Box No. 383	FARGO, N. D. Box No. 1472	SAN FRANCISCO, CALIF. Box No. 1445	

THE SILENT WATCHMAN

Complete Service for Elevated Water Tanks—30 Years' Experience

BE SAFE DON'T GAMBLE

Keep the Safety Factor in Your Tank the Dixie Way . . .

by welding seams, pits and rivets which gives a riveted tank 15% more Safety Factor than it had when built. No rivets removed, water supply maintained while work is in progress. On completely re-conditioned jobs, the painting is guaranteed for five years, repairs guaranteed for ten years, provided the tank is painted every five years. Yearly inspection, making all adjustments, if any, without additional cost.

Write us for Free Copy of Publication

SOUND PRINCIPLES OF WATER TANK MAINTENANCE and TANK TALK, *by* W. A. RILEY

SAFETY • SERVICE • SATISFACTION

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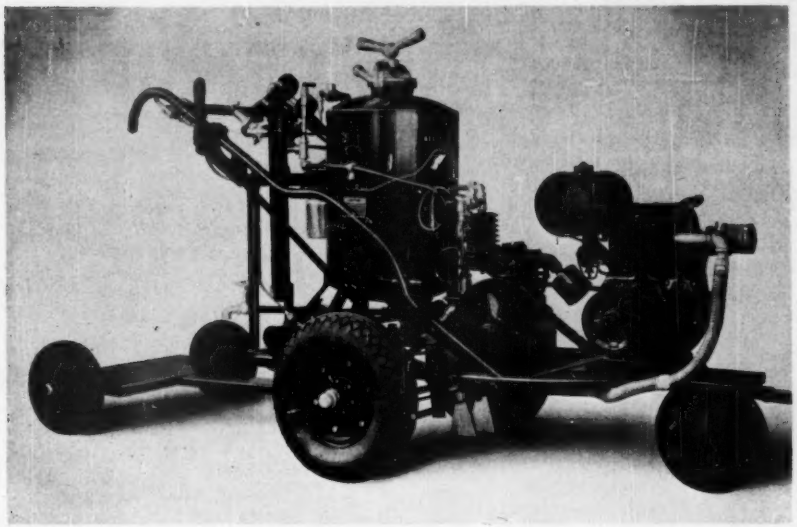
THE LARGEST ORGANIZATION OF ITS KIND GIVING SAFE MAINTENANCE AT LOW COST

If YOU Are An Official . . .

who is charged with the responsibility of providing for the SAFETY of the pedestrians and motorists of America, this ADVERTISEMENT deserves more than your passing interest.



The TIME to consider your ZONE-MARKING problem is NOW, so you'll be prepared next Spring, when the weather is satisfactory for striping. Zone-marking machinery, often designed for a specific application, cannot be built over night. WON'T YOU HELP US BY ANTICIPATING YOUR SPRING REQUIREMENTS?

Hand-propelled, self-propelled and truck mounted models efficiently and economically meet the requirements of the smallest village or the largest state highway system in America.

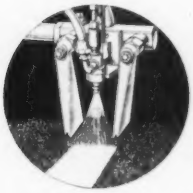
Recommended for the application of reflectorized line.

•

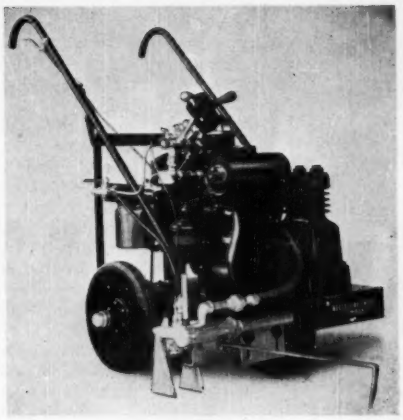
Write for Illustrated Folder Today

MODEL B-3-P

Keen-cut, attractive lines are applied to any type of surface, smooth or rough, at any speed, by directing exhaust gas or compressed air against the spray pattern, through especially designed millings in Kelly-Creswell AIR-CURTAINS.



Kelly-Creswell
AIR-CURTAINS
(A patented feature)

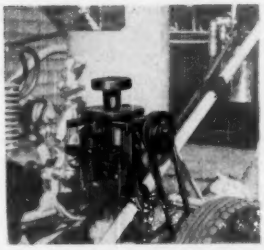


MODEL C

EXCLUSIVE FEATURES

- ★ **Air-Curtain Guide Plates**
- ★ **Special Striping Guns by DeVilbiss**
- ★ **Air-Actuated Traction**
- ★ **Built-in Pressure Cleaner**

Kelly-Creswell cam-operated intermittent line mechanism. For the application of "broken lines" automatically.



Of utmost importance to the prospective purchaser of Zone-Marking equipment are the points which are not disclosed in descriptive literature. These points are the reputation and reliability of the products, the engineering skill responsible for its design, the expert craftsmanship and care which has entered into its manufacture, and the maintenance of a responsible service department, equipped with a complete inventory of replacement parts. Kelly-Creswell recognizes that its obligation to the user continues after the purchase of its products.

K-C EQUIPMENT ANNUALLY APPLIES MORE HIGHWAY ZONE-MARKING MATERIAL THAN ALL OTHER COMPETITIVE MAKES.

KELLY-CRESWELL COMPANY

XENIA, OHIO, U. S. A.

NEW 18.5 M.P.H. TRENCHMOBILE

FACTS AT A GLANCE:

- 4 TRAVEL SPEEDS to 18.5 m.p.h., plus 2.36 m.p.h. reverse
- 4 DIGGING SPEEDS from 2.16 to 13.22 ft. per minute
- DIGS TO 4 FT. DEEP . . . 5" or 7½" wide
- GROUND-GRIP TIRES 9x24 rear ...6.50x16 front
- AUTOMOTIVE-TYPE STEER . . . truck-type hydraulic brakes
- OVERALL WIDTH 4'11" . . . 4'-6" wheelbase
- 22 H.P. ENGINE gas, air-cooled
- WEIGHT . . . Approx. 5,200 Lbs.

HERE'S a mobile, utility-size trencher you can send to do hurry-up excavation on small trenching operations for off-street connections . . . installing conduit, gas pipes, water-lines, etc., on new subdivisions . . . airport trenching. This new rubber-tired Parsons Model 80 Trenchmobile goes anywhere under its own power . . . over city streets . . . down the highway at road speeds. No waiting for truck or trailer. You just drive away . . . travel a mile in less than 4 minutes!

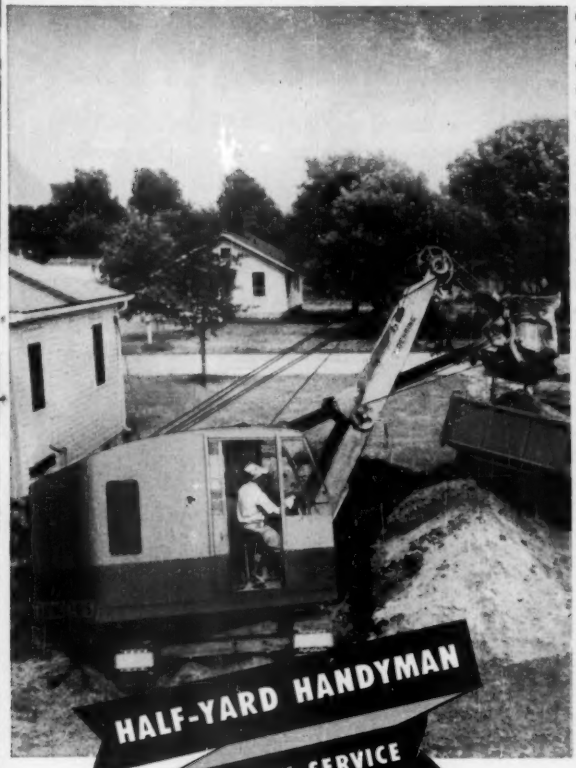
Operators like its simple, convenient controls . . . full visibility . . . automotive steering and positive, safe brakes. You'll like the way its wide range of traveling and trenching speeds . . . plus its heavy-duty ability to cut smooth-walled trenches in tough digging . . . licks every assignment. Everyone will welcome the new low costs you can now show with this versatile Parsons Model 80 Trenchmobile.

Get complete information from your local Parsons distributor . . . or write for new illustrated bulletin. For your major trenching, ask about the 4 big, heavy-duty Parsons Trenchliners*.

*Trademark Reg. U.S. Pat. Off. CP939

KOEHRING PRODUCT

PARSONS COMPANY
NEWTON, IOWA
KOEHRING SUBSIDIARY



HALF-YARD HANDYMAN FOR CITY SERVICE

In this Koehring 1½-yard 205, you get complete adaptability for every city assignment. As an excavator, its compact design and short tail swing lets the 205 maneuver into tight-quarters, work close to buildings and poles. When you need pull shovel service for excavating sewers, water mains, etc., there's no need to change boom. Same boom is used for both shovel and pull shovel attachments . . . saves you up to 25% over conventional excavators that require two separate booms.

As a heavy lift crane, this heavy-duty 205 gives you 50' to 85' boom reach, and lifting capacities up to 10 tons, depending on mounting. Equally efficient as dragline, clamshell, pile driver . . . and is easily changed from one attachment to the next, as your work requires. Works on crawlers . . . rubber-tired cruiser mounting . . . or travels up to 35 m.p.h. on truck mounting.

For full details on its many exclusive Koehring design features, send for illustrated 28-page 205 catalog. Other Koehring sizes: ¾-yd., 1½-yd., 2½-yd.

MOTO-BUG MAKES MAN-HOURS MORE PRODUCTIVE

On every type of wheelbarrow work, you'll get more production per man-hour with the new Kwik-Mix Moto-Bug. This modern power wheelbarrow hauls 3 to 4 times the normal wheelbarrow load with none of hard, manual effort formerly required. Easily takes its 1200 lb. (10 cu. ft.) load up 20% ramps, grades, and over rough-going . . . hauls bigger loads . . . makes more trips right up to end of shift.

There's no manual effort required to back up . . . Moto-Bug travels by power both forward *and reverse*, at speeds from 1½ to 4 m.p.h. Operators also like its easy steering, controlled by hand lever direct to rear wheel. Turns in own length. Narrow 33" width easily clears doorways, narrow aisles. Has controlled automatic gravity dump.

You also have *standard-make* 3.9 h.p. air-cooled gasoline engine . . . choice of platform body. See for yourself how low-cost Moto-Bugs can quickly pay for themselves on *your* work. Write for bulletin *today*. Other Kwik-Mix products include . . . concrete . . . bituminous . . . and plaster-mortar mixers.

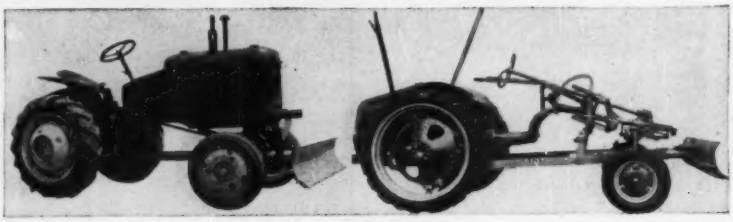
KOEHRING
COMPANY • MILWAUKEE 10, WIS.
SUBSIDIARIES: KWIK-MIX • JOHNSON • PARSONS

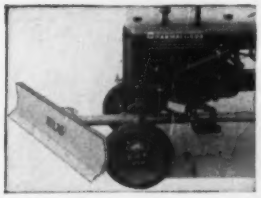
KWIK-MIX
COMPANY • PORT WASHINGTON, WIS.
KOEHRING SUBSIDIARY

ATLAS SNOW DOZERS
AVAILABLE FOR THE FOLLOWING TRACTORS

FARMALL-CUB
•
MASSEY-HARRIS PONY
•
ALLIS-CHALMERS MODEL G
•
INTERNATIONAL SUPER A AND AV
•
JOHN DEERE MODEL M

Provides a fast, easily operated method of clearing snow from sidewalks, barnyards, alleys, lanes or other areas where the use of large snow plows is impractical. Operated either by hand control or hydraulic power. Also available for these tractors are Atlas bulldozers and scrapers. Every owner should have these implements for leveling, cleaning up and scores of other jobs.





DEALERS: WRITE FOR PRICES & SPECIFICATIONS

ATLAS SCRAPER & ENGINEERING CO. "ATLAS MOVES THE EARTH"
6203 MAYWOOD AVE. BELL, CALIFORNIA

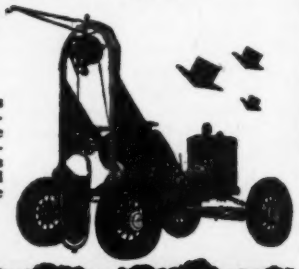
KEEP SEWERS OPEN
with
OK CHAMPION
POWER SEWER CLEANER

Town and City officials throughout America are adopting OK CHAMPION Power Sewer Cleaner to keep sewers clean and efficient. Takes roots, dirt, sand, and other debris up from main in one continuous operation. All men work above street level.

OPEN

CLOSED

Pulling forward opens the jaws that bite into obstructions. Reversing the pull on the bucket automatically closes jaws which hold load pulled back to street level. Write for complete details.



CHAMPION CORPORATION 4716 SHEFFIELD HAMMOND, IND.

VALVES & HYDRANTS

M & H products, including pipe line accessories, are well known for high quality of material and expert workmanship. They are made according to standard specifications and have been used for many years throughout the country. Write for Catalog No. 34. Address M & H Valve and Fittings Company, Anniston, Alabama.

Trèppe

FIRE and POLICE FLASHER LIGHT

COMMANDS ATTENTION!

Comes completely equipped with red lens and mounting bracket for bumper. Can be furnished with fender or roof mounting at no extra cost.

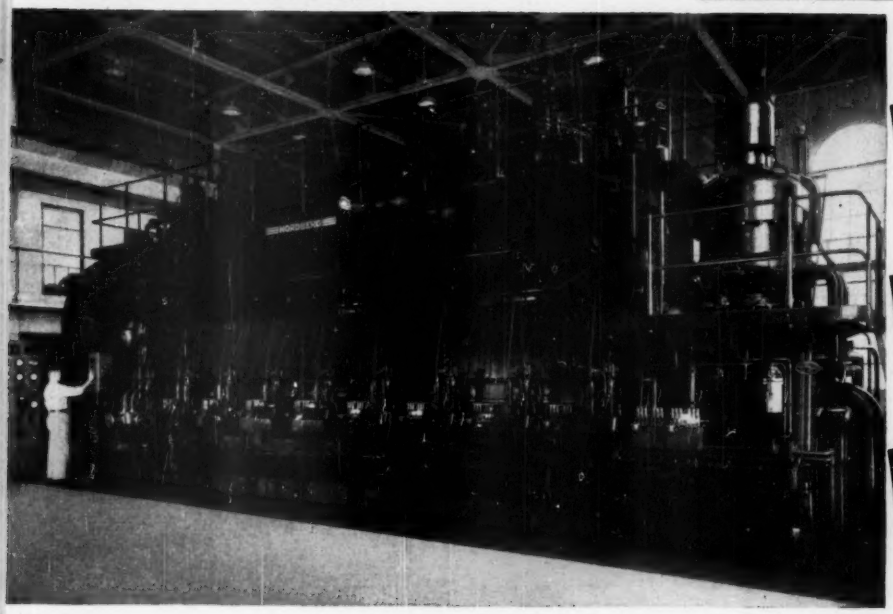
Furnished with red lens—plain or lettered—for POLICE, SHERIFF, STOP, POLICE STOP or RED CROSS LENS

A brilliant ruby-red flare of light. Flashes on and off sixty times per minute. This attention commanding light is built especially for Police and Fire Department use. There are no moving parts consequently it is 100% reliable.

Write for Descriptive Literature and prices.

TRUPPE Manufacturing Co. 3610 W. 16TH STREET DEPT. 9 CHICAGO 6, ILL.

3rd NORDBERG DIESEL for GRAND HAVEN



1937 . . . ADDITION TO THE EXISTING POWER PLANT MADE, AND INSTALLATION OF FIRST NORDBERG DIESEL, A 2250 HORSEPOWER UNIT.

1941 . . . INSTALLED THEIR SECOND NORDBERG DIESEL—A 3850 HORSEPOWER UNIT.

1948 . . . THE THIRD NORDBERG DIESEL INSTALLED—ANOTHER 3850 HORSEPOWER UNIT, LOCATED IN A NEW POWER PLANT ADDITION. (ENGINE AND BUILDING ILLUSTRATED.)

THE story of power plant progress in keeping up to ever-increasing electric demand in Grand Haven, Michigan, is typical of many similar municipalities. Starting over fifty years ago with a modest steam engine plant, Grand Haven has progressed through turbines, smaller 4-cycle engines, and ultimately to the use of large, sturdy Nordberg 2-cycle Diesels as their main power supply. Their recent selection of a third Nordberg unit provides further proof of the proven dependability of these popular engines.

It is interesting to note that the established economy of Nordberg Diesels is further enhanced in the Grand Haven plant through their ability to operate efficiently on a heavy, straight-run residual fuel oil usually ranging from 500 to 1000 S.S.U. at 100° F. This fuel is readily obtained locally.

This is just one example of the varied power problems being solved better, more economically with Nordberg Diesels . . . in a wide range of sizes from 10 to 8500 H.P.

NORDBERG MFG. CO., MILWAUKEE 7, WIS.

BUSCH-SULZER A DIVISION OF NORDBERG

NORDBERG DIESEL ENGINES

NORDBERG MACHINERY

PROVED

HERE'S MORE POWER TO YOU!

across the nation for almost 3 years

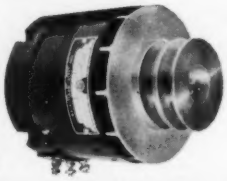
There are no other time-tested A-C Systems that will give you performance like this!

- Alternator systems can provide 50 amperes (or more) with engine idling and full output at all driving speeds to keep batteries fully charged while supporting the unlimited use of accessories.
- Weigh 60% less than D-C equipment of comparable rating.
- Require less space and less support.
- Require less maintenance and operate with less danger of burnout because Alternator has no commutator with commutating brushes or no rotating armature windings to cause sparking.
- Eliminate radio "fade out" and range reduction caused by weak batteries—hold radio noise level to an absolute minimum and prolong life of radio equipment.

THE ORIGINAL HIGHER-OUTPUT A-C GENERATING SYSTEMS KEEP BATTERIES UP —COSTS DOWN . . . SUPPORT MORE ACCESSORIES!

Way back in March, 1946, Leece-Neville introduced its now-famous, HIGHER-output A-C Generating Systems without fanfare. Today, almost three years later, installations on municipal and other vehicles operating under all types of conditions in all parts of the country have conclusively proved three things: 1. These systems keep batteries up; 2. These systems keep costs down; 3. These systems support the use of more accessories. If such *proved* advantages interest you . . . see your nearest Leece-Neville Service Station or write *The Leece-Neville Company, Cleveland 14, Ohio.*

THIS ALTERNATOR is the heart of the popular Leece-Neville A-C Generating System rated at 14 volts—100 amperes. Other 14-volt systems rated at 60, 80 and 150 amperes. For 6-volt circuits, there is a 45-ampere system (convertible to 60) and an 80-ampere system.



LEECE-NEVILLE

Pioneer and STILL Quality Leader

CRANKING MOTORS • GENERATORS • VOLTAGE REGULATORS • SWITCHES

Modernize—Powerize—Economize!

TURCO MAXI-POWER UNIT NO. 2

Models
VF3—Water-Cooled
ZF3—Air-Cooled

7 Power Sewer Cleaning Units *Offered by* TURBINE

Write for this catalog and get Maxi-Power specifications.

EXCLUSIVE FEATURES:

1. Tubular frame
2. Forged, inclosed gearing
3. One clutch
4. Flange ball-bearings
5. Designed level wind
6. 3-speed transmission
7. High-speed chain drive
8. No-clutch free spooling
9. Selected speeds
10. Bucket swing positioner

Part of fleet of 27 trucks of Spokane County, Washington, equipped with KIM Hotstarts. This installation makes costly garage building unnecessary.

No cold starts here

KIM Hotstart preheats engines, makes them start instantly, regardless of weather.

Despite cold winter weather, Spokane County keeps its trucks outdoors all year round — and engines start easily every morning. Depreciation is reduced and maintenance costs are unusually low.

KIM Hotstart engine pre-heaters have made this record possible. These are plugged into the electric circuit at night, keep the engines warm and instantly ready to go again.

Engine wear is reduced.
Batteries give longer service.
No lost warm-up time.
Gasoline consumption is less.

For Gas and Diesel Engines

KIM Hotstarts will perform equally well for you. They are used wherever electric current is available. Fleet owners, bus systems, fire departments, contractors, farmers, automobile owners—all use them profitably.

Write for Literature

Let us show you how to avoid winter damage to your equipment. Fill in and mail us the coupon below, and you will receive descriptive literature and the name of your nearest KIM Hotstart dealer.

KIM Hotstart

REG. U.S. PAT. OFF.

KIM Hotstart Manufacturing Co.
West 917 Broadway, Spokane 11, Wash.
Please send literature, prices and name of local dealer.

Name_____

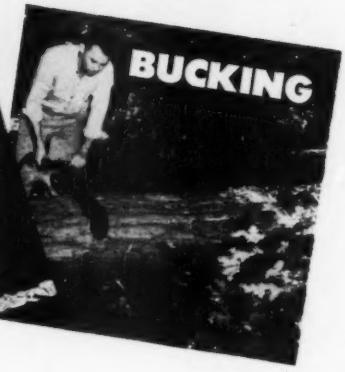
Company_____

Address_____ Zone____

City_____ State_____

Another Outstanding HOMELITE Development—The New

One Man ELECTRIC CHAIN SAW



Get an Extra Bonus with Homelite Carryable Power

Don't forget this most important point. The same Homelite Carryable Generator that you use to operate your Homelite One Man Chain Saw can also be used to operate circular power saws, electric drills and many other power tools as well as brilliant floodlights for night work. This is possible because Homelite Generators also supply 110 volt current suitable for standard universal electric tools.

The Saw That Cuts Time and Costs

This is it . . . an amazingly light yet rugged and efficient chain saw that will certainly be mighty useful not only for clearing tree damage caused by storms but also for routine jobs . . . a High-Cycle Electric Saw that *one man* can use with ease.

With a Carryable Homelite High-Cycle Gasoline-Engine-Driven Generator as its power supply, you can readily use this 27 lb. chain saw anywhere . . . on highways or in woods. Packed with power, it cuts 15″ hardwood in 47 seconds, 15″ softwood in 18 seconds and handles trees up to 3′ in diameter. In the fastest possible time you can do limbing, felling, bucking and clearing with cuts flush to the ground.

Simple to operate, this saw makes cutting . . . on all cuts, all positions . . . much easier. And there are no fumes or engine heat and vibration to cause fatigue. It is simple in design, sturdy in construction . . . sure to give you greater dependability and lower maintenance costs.

Send for new illustrated bulletin.

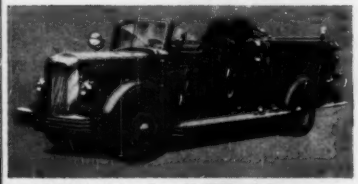
HOMELITE CORPORATION

CARRYABLE PUMPS • GENERATORS • BLOWERS
101 RIVERDALE AVENUE
PORT CHESTER, NEW YORK

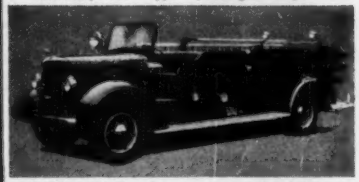
Here... There... Everywhere...

MANCHESTER, N. H. — Type 85, 750-gal. Pumper

TORONTO, ONTARIO, CANADA
Type 95, 1000-gal. Pumper



NEWARK, N. J. — Type 19, 1000-gal. Pumper



BOYNTON BEACH, FLA. — Type 45, 500-gal. Pumper

SIOUX CITY, IOWA — Type 505, 500-gal. "Quad"

PORTLAND, OREGON — Type 21, 1250-gal. Pumper

IT'S A MACK that sets the pace!

● North . . . South . . . East . . . West — wherever there's a call for the finest in fire apparatus — you'll find a Mack on the job. And with good reason. For Macks have long borne an unequaled reputation for advanced design and sound construction — qualities which pay off in peak fire-fighting performance.

Macks provide top performance because they are the products of the greatest engineering and manufacturing facilities in the field, with experience dating back to the beginnings of motorized apparatus. They are backed by a nation-wide network of 67 factory branches and well over 600 dealers, a ready source of quick parts supply and skilled service.

Wherever your department may be and whatever its needs may be, you will be a pace-setter too when you *Modernize with Macks!*

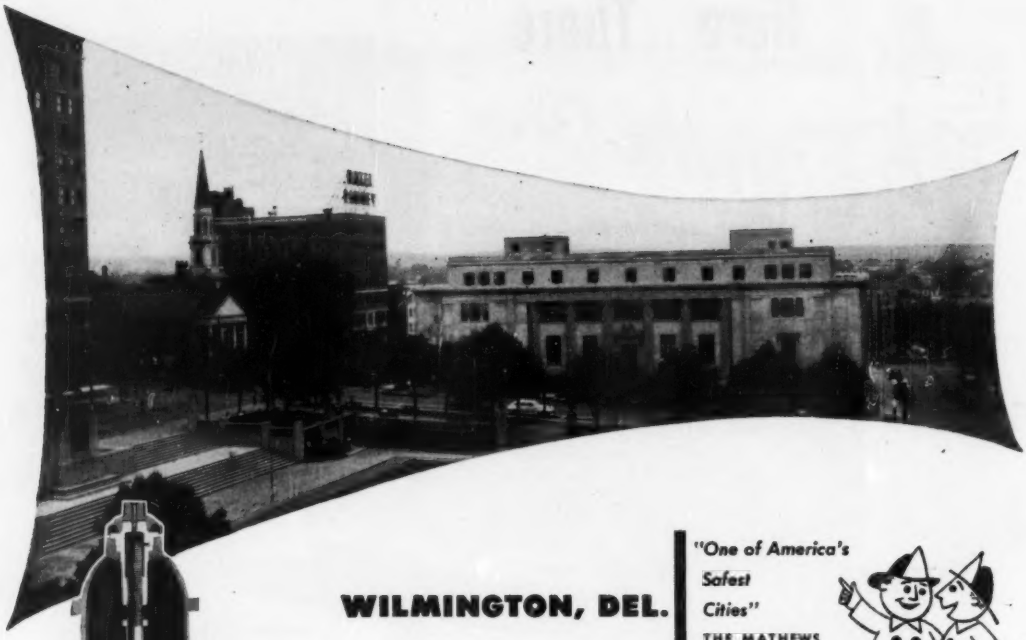
Mack

FIRE APPARATUS

Mack Manufacturing Corp.
FIRE APPARATUS DIVISION
Long Island City 1, New York
In Canada: Mack Trucks of Canada, Ltd.

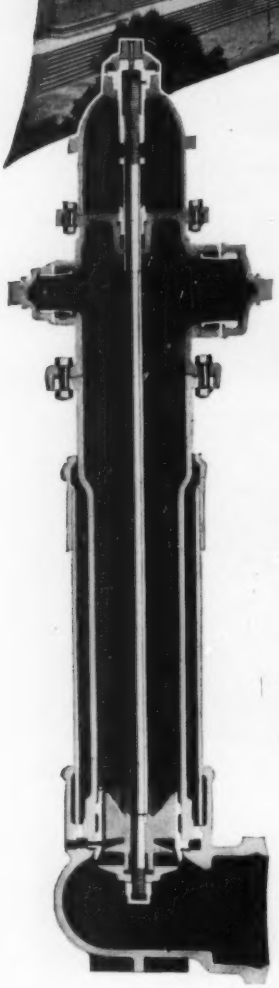
7089

TRIPLE COMBINATION PUMPERS—500 to 1500 GALLONS . . . SQUAD WAGONS
CITY SERVICE AND QUADRUPLE COMBINATION LADDER TRUCKS



WILMINGTON, DEL.

"One of America's Safest Cities"
THE MATHEWS FIREMEN SAY



SIMPLE LOGIC! For Wilmington is protected by Mathews Modernized Hydrants, which means safety plus—for two big reasons. First, the hydrant need not be out of commission long in case of an accident. All the working parts are contained in a removable barrel which can be replaced in a few minutes without excavating.

Secondly, Mathews are designed for troublefree service—as generations of use have proved. Water cannot reach the thread and rust it. A shield operating nut, capping the revolving nut, keeps out rain and dust and provides free, quick action at all times. These and other features combine to make a hydrant in which there is just about *nothing to go wrong*.

The welfare of your community is your highest public interest. Send for descriptive literature and read in detail how the Mathews Modernized Hydrant can furnish the safety plus you are looking for.

OTHER MATHEWS FEATURES: Head can be turned 360° • Replaceable head, nozzle outlets easily changed • Nozzle levels raised or lowered without excavating • Protection case of "Sand-Spun" cast iron for strength, toughness, elasticity Operating thread only part to be lubricated • A modern barrel makes any Mathews Hydrant good as new • Low maintenance cost

MATHEWS HYDRANTS

Made by R. D. WOOD COMPANY

Public Ledger Bldg., Independence Square, Philadelphia 5, Pa.

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

Your city *NEEDS* high-pressure fog fire protection

SAN ANTONIO specifies Bean! These two John Bean High-Pressure Fog Fire Fighters were recently delivered to the San Antonio Fire Department, San Antonio, Texas. John Bean Fire Fighters carry their own water supply—provide two guns of 30 gallons each—850 pounds pump pressure. Delivered complete with all accessories.

FOR THE FINEST, INSIST ON A

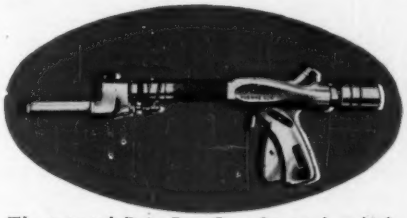
John BEAN HIGH-PRESSURE FOG FIRE FIGHTER

Any city, regardless of size, needs the kind of fire protection afforded by a John Bean High-Pressure Fog Fire Fighter.

John Bean fire fighters go into action without delay, put fires out *fast*. High-pressure fog can be brought into play the instant equipment arrives at the scene of a fire. Screen action of fog makes entry into burning buildings safer.

Water damage, frequently as high as two-thirds of the total loss in fires, is cut to practically nothing with a John Bean High-Pressure Fog Fire Fighter. Fog smothers blaze quickly, with remarkably little water.

When choosing high-pressure fog fire equipment, it will pay you to investigate John Bean. Sixty years of experience behind this high-pressure system is your guarantee of quality. You know your investment is protected when John Bean makes it.



The patented Bean Fog Gun. Operated at high water pressure, it gives every type of fog pattern for fire fighting. One man can operate it easily.

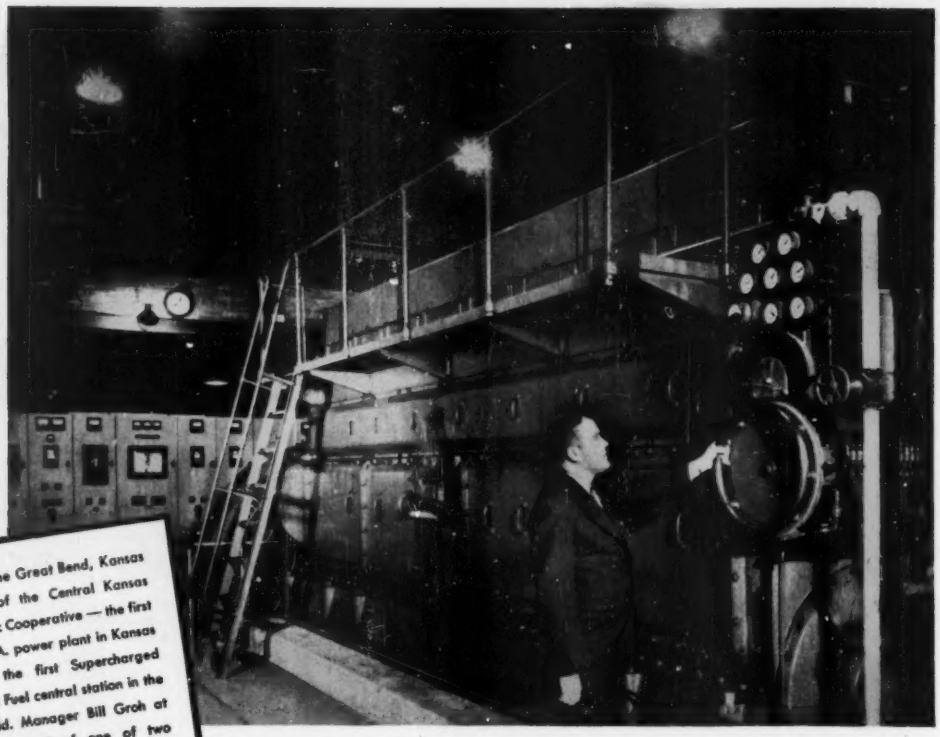
BEAN *Original* **HIGH-PRESSURE FOG FIRE FIGHTER**

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY AND CHEMICAL CORPORATION

JOHN BEAN DIVISION, DEPT. 129, LANSING 4, MICH. • JOHN BEAN DIVISION (WESTERN), 401 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS



Inside the Great Bend, Kansas plant of the Central Kansas Electric Cooperative — the first R. E. A. power plant in Kansas and the first Supercharged Dual Fuel central station in the world. Manager Bill Groh at the control of one of two Worthington Type SEHGO-8 Dual Fuel Diesel Engines.

"TOTAL FUEL AND LUBRICANT COST PER KWH—$0.001?+!"

Kansas R. E. A. Station Reports Steady Savings With Worthington Supercharged Dual Fuel Diesels

One way to get the real low-down on economical generation of electric power is from a progressive R. E. A. plant. Here, in part, is what the Central Kansas Electric Cooperative Association has to say about its Worthington Dual Fuel Diesel equipment:

"Our engines have run approximately 3050 and 4100 hours, respectively, under loads varying from 300 to 1160 KW. Operation has been satisfactory at all loads.

"One remarkable point is the low lubricating oil consumption . . . Also, we have had very little maintenance work.

"The past month the total fuel and lubricant cost per KWH generated has been 1.517 mills. . . . The saving of gas over fuel oil is very great.

"A fire necessitated shutting off our gas line for 12 hours. We switched to oil Diesel operation without any interruption."

Economy In Every Detail

With Worthington Dual Fuel Diesels you get outstanding thermal efficiency on the cheapest fuel available — oil, gas or oil-and-gas in any ratio — while Worthington's long leadership in developing Diesel design and performance means additional power for every operating-dollar you spend. For further proof that *there's more worth in Worthington*, contact *Worthington Pump and Machinery Corporation, Engine Division, Buffalo, N. Y.*

WORTHINGTON

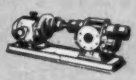
EB-2

YOUR PARTNER IN POWER PROGRESS

Diesel engines, 150 to 2,640 hp . . . gas engines, 175 to 1,720 hp . . . dual fuel engines, 225 to 2,640 hp.

WORTHINGTON-BUILT AUXILIARIES

Balanced Angle Compressors



Oil Transfer Pumps

Cooling Water Circulating Pumps

Evaporative Type Engine Water Cooler

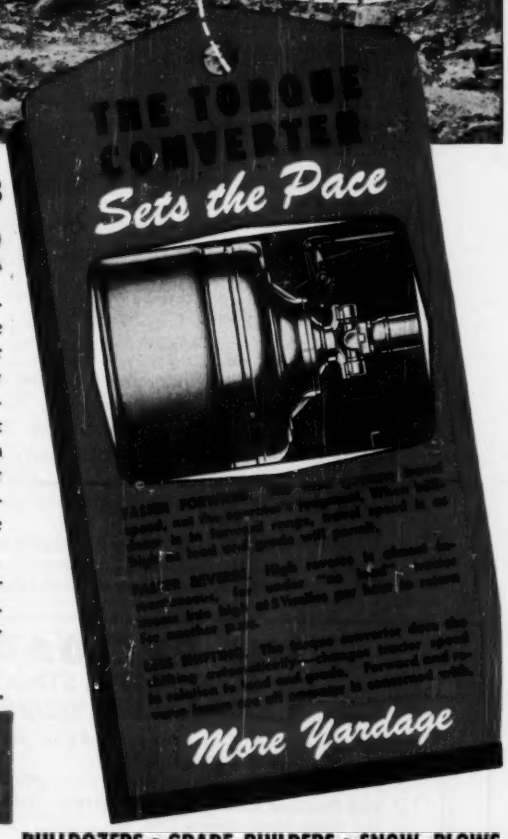
POWERFUL Workhorse-

THE TOUGHER THE JOB THE MORE YOU NEED A BAKER

Here's a rugged "he-man" outfit that can take a real beating and "dish it out" in return. The sensational performance of the giant Allis-Chalmers HD-19 teamed up with the Baker Hydraulic Bulldozer has rocked the entire earthmoving industry — set a new high in production — a new low in cost. Compare the Baker with any bulldozer on the market — you get direct lift; direct down pressure; engine mounting, 5-position adjustable blade tilt; interchangeable bulldozer or grade-builder blades; blade pitch adjustment; smooth, fast, dependable hydraulic control, plus extra rugged construction which has made Baker famous throughout the world.

Mounted on an HD-19 you've got an unbeatable bulldozing team — speed, power, traction and over 48,000 lbs. of fighting weight. Your best bet is Baker. See your Allis-Chalmers Baker dealer now.

BAKER MFG. CO., SPRINGFIELD, ILL.



BULLDOZERS • GRADE BUILDERS • SNOW-PLOWS

PRELOAD PRESTRESSED TANKS

PRELOAD PRESTRESSED CONCRETE TANKS ARE IMMEDIATELY AVAILABLE FOR A WIDE VARIETY OF SERVICES—WITH ECONOMY IN DESIGN AND CONSTRUCTION AND WITH LOWEST COMPARATIVE LONG-TERM MAINTENANCE COSTS

WATER STORAGE and TREATMENT

Ground, Standpipe and Elevated Tanks; Settling Tanks, Clarifiers, etc.

PETROLEUM INDUSTRY

Crude Oil, Bunker C, Fuels Oil, Gasolines, etc.

SEWAGE TREATMENT

Sludge Digesters, Clarifiers and Filters, etc.

PAPER MILLS

Pulp, White Water, and Black Liquor Tanks; Savealls, Precipitaters, etc.

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Grain, Cement Dry Chemicals, Coal, Rock, etc.

CHEMICAL & PROCESSING INDUSTRIES

Saveall Tanks, Acid and Alkali Storage, Precipitators, Mixers, etc.

Preload Prestressed Concrete Tanks, utilizing Preload Wire Prestressing, are available *now* using local labor and materials. No waiting—construction can start in several weeks—completion in several months. With no exposed metallic surfaces and dense Gunite construction, Preload tanks have a long record of "low-maintenance-cost-service" under an extreme range of weather conditions. Over 500 Preload Prestressed Tanks are in municipal and industrial service.

Send for tank data and our brochure "The Distinguished Clientele of The Preload Companies", a partial list which illustrates the wide versatility and established performance of Preload Tanks.

THE PRELOAD COMPANIES

211 EAST 37TH STREET, NEW YORK 16, N. Y.

Designers and Builders of Prestressed Concrete Storage Tanks and Pressure Pipe
Prestressed Concrete Bridges and Cement Lining of Pipe in Place

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The Preload Central Corporation
929 Porter Bldg., Kansas City, Mo.

PRELOAD TRADE MARK

The Preload Pacific Corporation
333 Kearney St., San Francisco

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American

Hydraulic TOWER LIFT and LADDERS

① HYDRAULIC TOWER LIFT

② REVOLVING AERIAL LADDER

③ SEAGRAVE AERIAL PLATFORM LADDER

Safe Way to Service Street Lights, Signals, Trolley Wires and Other Overhead Work

When you need overhead equipment, look to American, manufacturers of bodies for utility industries. Here you have three proved units for any type of overhead work . . . the American Hydraulic Tower Lift . . . American Seagrave Aerial Platform Ladder . . . and American Aerial Revolving Ladder.

Power, telephone, transportation, other utilities, and municipalities use these units for signal wire and street lighting maintenance; tree trimming; painting; heavy line construction work; servicing overhead wires; installing and maintaining street lighting units, traffic signals, electric signs, etc.

Equip your old or new trucks with either of the three (Seagrave, Tower or Aerial), depending upon requirements. Most companies place order for overhead equipment for mounting by us on new American bodies. Send your order or inquiry direct to Cleveland, Ohio, or any of the sales offices listed below.

HYDRAULIC TOWER LIFT

① This universal unit has been a standard with many utility men for many years. Swivel type insulated platform offers complete versatility. Movement of tower controlled by man on the tower platform. Tower lift (heavy duty) comes in three sizes . . . 21'-25' and 28'.

REVOLVING AERIAL LADDER

② Here's a versatile unit for diversified light duty work. Turns complete circle in as narrow a body as 46". Has 40 spotting positions in 360 degrees yet offers uniform balance regardless of angle. Can be mounted on almost any size truck body. Three sizes . . . 23'6"-26'6" and 30'6".

SEAGRAVE AERIAL PLATFORM LADDER

③ This heavy duty unit has carrying capacity for two or more men on the big, sturdy and safe platform. Easy to reach across a parked car to service street light mounted on sidewalk. Maximum height of ladder 21', enabling average workman to work at 26' to 27'. Lowest height of Seagrave — 8'9".

THE American COACH & BODY COMPANY

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DISTRIBUTORS: BAKER EQUIPMENT ENGINEERING CO. SUMMIT & NORFOLK STS. RICHMOND 11, VA. · EQUIPMENT SERVICE, INC. 1 WAWARME AVE. HARTFORD 6, CONN.

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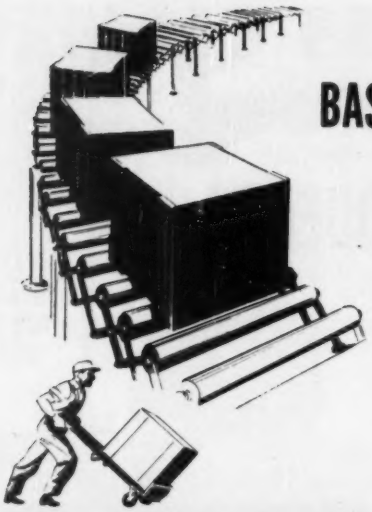

BASED ON THE RIGHT IDEA

Compared to cheap hand trucks the initial cost of a conveying system is high indeed. But modern industry knows that performance is what counts and wisely invests to reduce expense.

Extra strength and precision construction may make the initial cost of the KARPARK slightly higher but its dependable, year in and year out performance; its low maintenance costs, its steady production of revenue, emphasize its true economy. To avoid mistakes, write for the complete facts about KARPARK.

KARPARKS ARE MANUFACTURED BY THE HERSCHEDE HALL CLOCK CO.

KARPARK *Automatics*

KARPARK CORPORATION, CINCINNATI 6, OHIO

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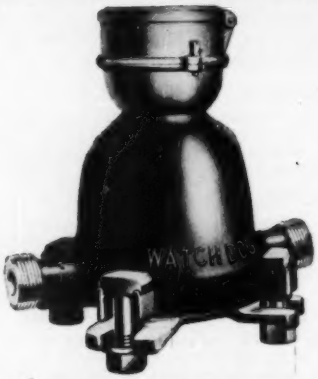

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All Sizes All Types

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296 South Street Newark 5, New Jersey

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SPECIALISTS IN CEMENT GUN WORK

RESERVOIR LININGS (NEW AND OLD) • CONCRETE AND MASONRY REPAIRS • STEEL ENCASEMENT • FIREPROOFING • STEEL COAL BUNKER, STACK, HOPPER, AND PLATE LINING • SEWER LINING AND REPAIRING • CANAL, DITCH, AND DRAIN LINING.

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cast iron
PIPE
FOR WATER, GAS, SEWERAGE AND INDUSTRIAL SERVICE

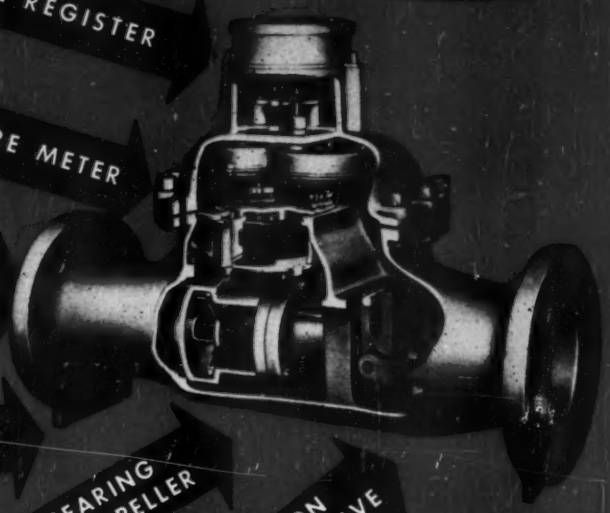
In the files of our Engineering Service Department that go back nearly half a century, are records of the solutions to unusual problems in pipe design and installation, such as the flexible joint stream crossing illustrated above. If you have such a problem we may be able to tell how a similiar problem was previously solved. Our wide design and manufacturing experience with special fittings to meet unusual requirements, where standard material cannot be used, may also be found of value to you. **United States Pipe and Foundry Co., General Offices: Burlington, New Jersey. Plants and Sales Offices Throughout U. S. A.**

PITTSBURGH EMPIRE *Compounds*

SINGLE REGISTER

SUPER-ACCURATE EMPIRE METER

STRAIGHT-THRU FLOW
(FOR PROPELLER UNIT)



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LIGHT WEIGHT

ROLLER BEARING
MOUNTED PROPELLER

SWING ACTION
COMPOUNDING VALVE

ROCKWELL

6 ADVANTAGES
FOUND IN NO OTHER DESIGN

. . . and no other meter furnishes so many *conveniences* for the operating man. Consider the single register that speeds meter reading and eliminates errors. Compare the light weight of these meters against that of conventional compounds. One man can install a 3 in. Pittsburgh-Empire alone. Don't overlook maintenance ease. Full accessibility to all parts has been provided.

The Pittsburgh-Empire Compound meter can be quickly dismantled or assembled while in the line. It runs smoothly, quietly, without pulsation.

Such operating conveniences, plus sound mechanical advantages add up to the greatest compound meter value ever offered. Instruction bulletin W-803 gives full facts about this superior design. Write for it!

PITTSBURGH EQUITABLE METER DIVISION
ROCKWELL MANUFACTURING COMPANY • PITTSBURGH 8, PA.
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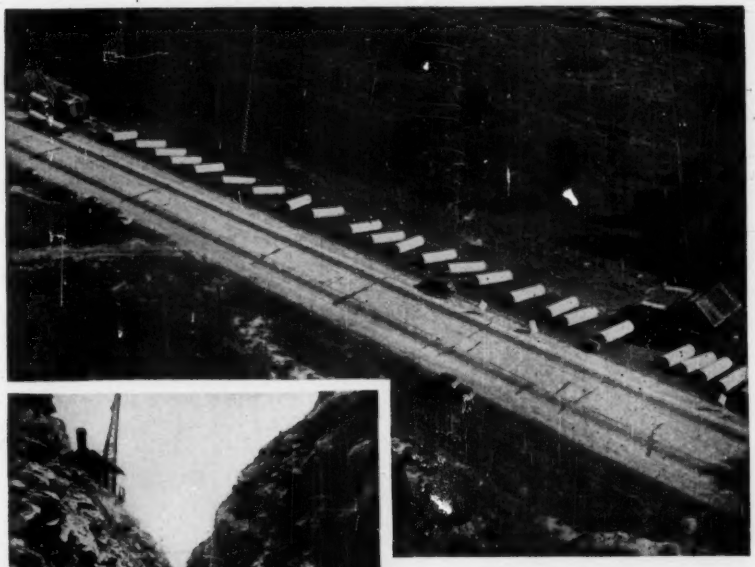
YOU CAN'T BLAME WATER FOR THE HIGH COST OF LIVING



Above—1947: Installing the 48" Lock Joint Prestressed Concrete Cylinder Pipe Line for the Saginaw-Midland Water Supply Commission.

Left—1923: Installing the 277,000' Lock Joint supply line for the City of Tulsa, Okla.

NO COMMODITY SO VITAL TO SOCIAL AND ECONOMIC WELL-BEING CAN BE PURCHASED AS CHEAPLY AS WATER

Water which changes deserts into gardens and translates itself into heat, light, power and fire protection can be bought for pennies per ton, despite the fact that a sizeable investment is required to provide a water supply for a community.

To protect this important investment farsighted hydraulic engineers specify Lock Joint Reinforced Concrete Pressure Pipe, because they know that no pressure pipe line put into service by the Company has ever failed in the service for which it was designed. Since Lock Joint Reinforced Concrete Pressure Pipe maintains permanently its initial high carrying capacity, engineers are assured of maximum economy in pumping and maintenance charges.

LOCK JOINT PIPE COMPANY

Est. 1905

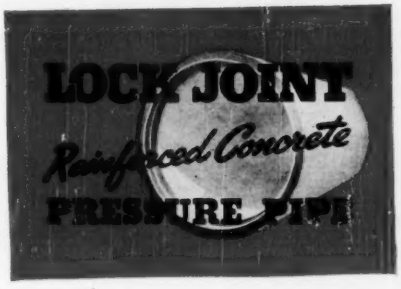
P.O. Box 269, East Orange, N. J.

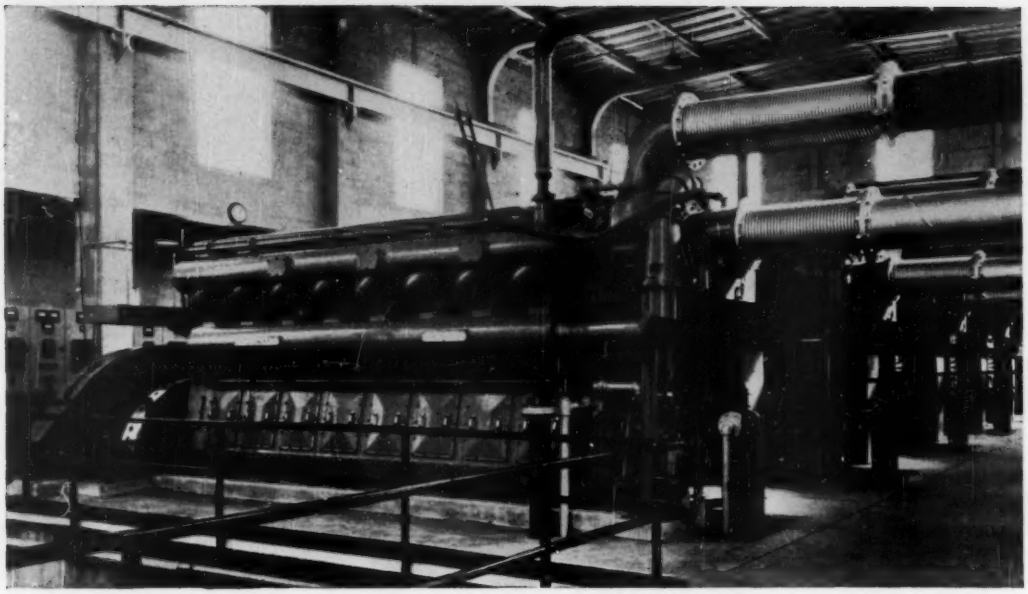
PRESSURE PIPE PLANTS: Wharton, N. J. • Turner, Kans.

BRANCH OFFICES: Cheyenne, Wyo. • Denver, Colo. • Kansas City, Mo. • Joplin, Mo. Valley Park, Mo. • Chicago, Ill. • Rock Island, Ill. • Wichita, Kan. • Kenilworth, N. J. Hartford, Conn.

SCOPE OF SERVICES

Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains in a wide range of diameters as well as Concrete Pipe of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.





SUPERIOR has been elected *Again!*

Superior Diesels are being used for more and more installations where a dependable source of power is important. Like the North Carolina town that recently built a power plant to meet its expanding industrial and domestic requirements. Five supercharged, model 80-GX-8 Superior Diesels driving 1,000 KW generators were chosen to power this important new plant.

There are some good reasons for this constantly growing acceptance. Superior Diesels are economical to operate and maintain. And they provide top performance day-after-day because of the following features:

Conservative Ratings • Efficient Pressure Lubrication • Clean Combustion • Precision Bearings • Heavy Rigid Crankshafts • Strong Bases and Cylinder Blocks • Proved Roller Chain Camshaft Drives • Oil Cooled Pistons. We will be glad to send you a fully illustrated booklet that tells how these features can help you.

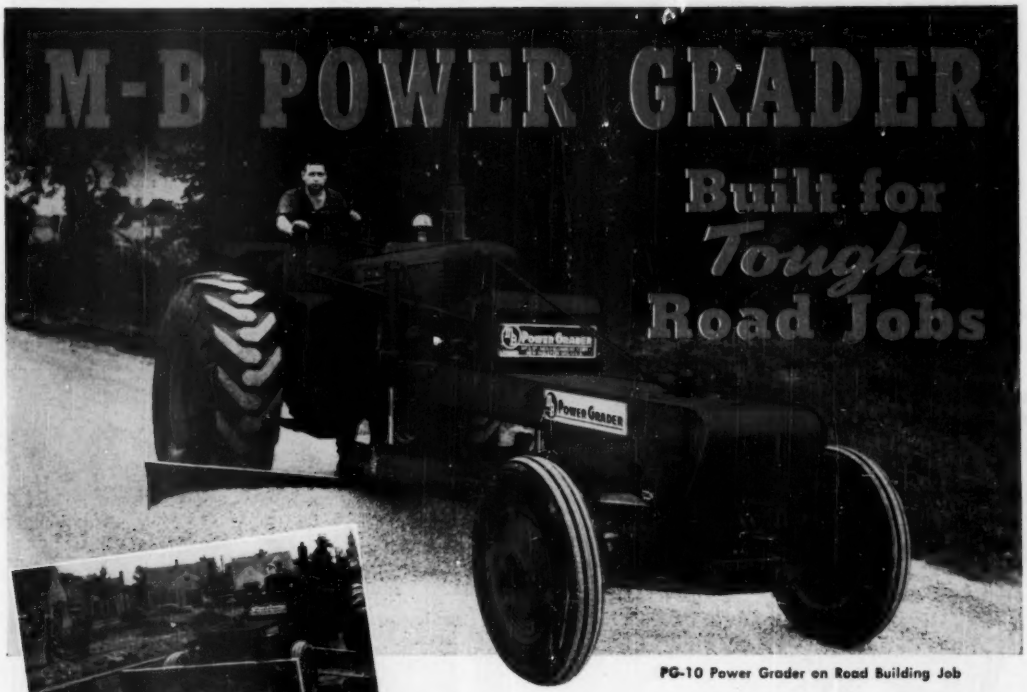
THE NATIONAL SUPPLY COMPANY
SUPERIOR ENGINE DIVISION
Plant and General Sales Office: Springfield, Ohio

THE NATIONAL SUPPLY COMPANY — NSCO

Superior DIESEL

M-B POWER GRADER

Built for *Tough* Road Jobs



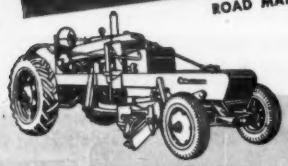
PG-10 Power Grader on Road Building Job

BULLDOZING

ROAD MAINTENANCE

M-B Power Graders provide greater working capacity for tough road building and maintenance jobs. Balanced design, plus sturdy all-welded frame construction, assure maximum blade performance with more traction through large diameter rear tires, utilizing the maximum 40 H.P. gasoline or Diesel engine. Finger-tip hydraulic controls give operator full control of blade. Direct application of hydraulic power on moldboard assures steady blade pressure at all times. Year 'round efficiency is achieved through easy mounting of bulldozer blade, scarifier, power sweeper and snow plow. Low initial investment and low operating costs.

For additional information, contact the Meili-Blumberg Distributor in your territory, or write for Bulletin 141.



M-B POWER GRADER

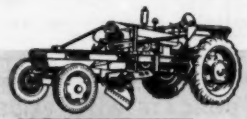
Designed for all types of grading and filling jobs. Hydraulic controls make it easy to operate. Used by state highway departments, counties, cities and industrial plants. Low operating and maintenance costs.

M-B MARKERS

Ideal for striping streets, parking areas, airports, playgrounds, industrial plants, etc. Rugged, compact construction. Hand or self-propelled models. M-B Markers are versatile to operate . . . have a large capacity . . . provide fast, low-cost striping.

M-B TRAILERS

Sturdily constructed with all-steel welded frames and Tilt-Bed platforms for easy loading. Designed for hauling various types of tractors with attachments, rollers, tampers, shovels, graders, ditchers, air compressors, etc. Sizes 2½ to 10 tons.



M-B MAINTAINER

Lightweight Maintainer engineered for heavy duty maintenance work. For contractors, towns, cities and highway departments. Attachments such as cab, scarifier, power sweeper, snow plow, bulldozer blade, and leaning wheels, available.

MEILI-BLUMBERG *Corp.*

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New . . . Permanent

HOLD EVERYTHING!
SEE THE NEWEST AND BEST

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PERMANENT ALUMINUM STREET SIGNS

LOW COST **NO MAINTENANCE**

VISIBLE DAY & NIGHT

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Catalog #20-5 Illustrated

LAKE SHORE MARKERS

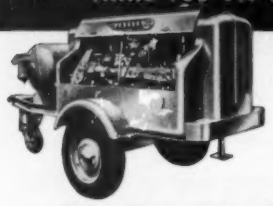
Div. of Lake Shore Pattern Works

654 W. 19th Street, Erie, Pa.

NEW JAEGER 125 FT. COMPRESSOR

DOES 40% MORE WORK

THAN 105 FT. MACHINES



Runs 2 Heavy Breakers or 3 Medium Breakers at Full Pressure of 90 Pounds.

yet costs no more and uses no more fuel when not delivering more air

all other new sizes are comparable:

Jaeger's "new standards" are 75 cfm instead of 60 — 185 cfm instead of 160 — 250 cfm instead of 210 — 365 cfm instead of 315 — 600 cfm instead of 500 — to match the requirements of today's air tools, run more tools at full pressure and efficiency, do 30% to 40% more work for the same money. See your Jaeger distributor or get new Catalog JC-8.

Main Office and Factory
Columbus 16, Ohio

the JAEGER machine co.

REGIONAL OFFICES: 1504 Widener Bldg. Philadelphia 7 · 226 N. La Salle St. Chicago 1 · 235 American Life Bldg. Birmingham 1

HAND

STORAGE BATTERIES

FOR MUNICIPALITIES

HAND storage batteries are heavy-duty batteries provided with heavy, hand-pasted tank-formed plates, heavy glass mats, acid and heat resisting micro-porous rubber separators, splash decks and genuine hard rubber containers. Built for use in Police Radio cars, Sanitation trucks, snow plows, sweepers, emergency trucks, ambulances, and fire apparatus.

The Hand Laboratory, Nyack, N. Y.

DEDICATE WITH PRIDE THESE EVERLASTINGLY BEAUTIFUL PLAQUES

call for erecting memorials.

NEWMAN HAND-CHASED BRONZE is traditionally ideal for tablets, honor rolls, signs, building markers and door plates.

ATTRACTIVE PRICES FOR FINER BRONZE PRODUCTS BY NEWMAN

OUR 67th YEAR

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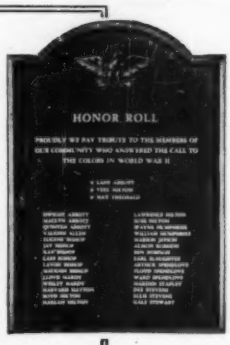

Newman Brothers, Inc.
659 W. 4th St. Cincinnati 3, O.

LEADITE

FOR JOINTING CAST-IRON WATER MAINS

Melted and Poured ***No Large Bell-holes to Dig***

Saves at Least 75%

Leadite is shipped in powder form, packed in sacks of 100 lbs. net each. Leadite tested and used for over 50 years • Leadite joints improve with age.

Be sure it is Leadite and accept no imitations

THE LEADITE COMPANY
Girard Trust Co. Bldg., Philadelphia 2, Pa.

Performance-Proven

POWER PLANTS

International Diesels are *performance-proven.* They have given remarkably dependable and economical service as the engines in International Diesel Crawler tractors. There just isn't any rougher work for an engine. Heavy loads, tough working conditions and long hours of operation all combine to give a crawler tractor engine a real going over.

Make no mistake about it. International Diesels are *performance proven.* You can be sure that you get full measure of profit-producing power from any International Diesel you select.

See your International Industrial Power Distributor or Dealer about your power requirements. He handles the full line of International Diesel and gasoline power units listed at the right.

He will be glad to help you select the right International Power Unit for your specific requirements. And you'll get the benefit of profit-producing power.

INTERNATIONAL ENGINES are available as complete power units in the following models:

DIESEL:	UD-24	180 h.p. @	1375 r.p.m.
	UD-18A	125 h.p. @	1600 r.p.m.
	UD-16	100 h.p. @	1800 r.p.m.
	UD-14A	76 h.p. @	1400 r.p.m.
	UD- 9	53 h.p. @	1500 r.p.m.
	UD- 6	39 h.p. @	1500 r.p.m.
GASOLINE:	U-9	55 h.p. @	1500 r.p.m.
	U-6	41 h.p. @	1500 r.p.m.
	U-4	31½ h.p. @	1800 r.p.m.
	U-2	22 h.p. @	1800 r.p.m.

Write for informative catalogs on International Power Units:

Form **A-54-LL**
INTERNATIONAL ENGINES AND POWER UNITS
Gas, Gasoline or Distillate

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INTERNATIONAL DIESEL ENGINES AND POWER UNITS

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180 N. Michigan Avenue, Chicago 1, Illinois

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INDUSTRIAL POWER

CRAWLER TRACTORS
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Now! IT'S THE BD-3

A 4th DIESEL MOTOR GRADER JOINS THE ALLIS-CHALMERS LINE*

MOST POWERFUL MOTOR GRADER IN ITS CLASS
78 BRAKE HP. — 19,042 LBS.
2-Cycle GM Diesel Engine

A CONSTRUCTION MACHINE THROUGH AND THROUGH

Handles every type of grading on road or street construction—builds ditches, cuts backslopes, removes sod, shapes up and finishes surface . . . scarifies, mixes blacktop, plows snow.

FAST, HIGHLY MANEUVERABLE

- Six Forward Speeds — 2.21 to 15.58 m.p.h. . . . Three Reverse — 2.64 to 5.74 m.p.h.
- Travel speeds smoothly synchronized with operator controls . . . all the needed power applied as required.
- Easier to steer and maneuver on every type of job — shorter turning radius makes it ideal for narrow roads and streets.

***OTHER ALLIS-CHALMERS DIESEL-POWERED MOTOR GRADERS**

AD-4, 104 Brake hp. . . . 22,140 lbs. AD-3, 78 Brake hp. . . . . 21,835 lbs.
BD-2, 50.5 Brake hp. . . . 17,772 lbs.

COMPLETELY EQUIPPED including electric starter and lights. Available with scarifier, cab and snowplow. Choice of 7:50, 9:00 or 13:00 front tires.

PATTERNED AFTER THE POPULAR MODEL AD MOTOR GRADER

STRONG — exclusive tubular frame . . . absorbs shocks, protects control rods inside frame.

ACCURATE — cuts smoothly, blade held firmly on road through direct down pressure.

HIGH CLEARANCE — 28" throat clearance for handling bigger windrows without interference.

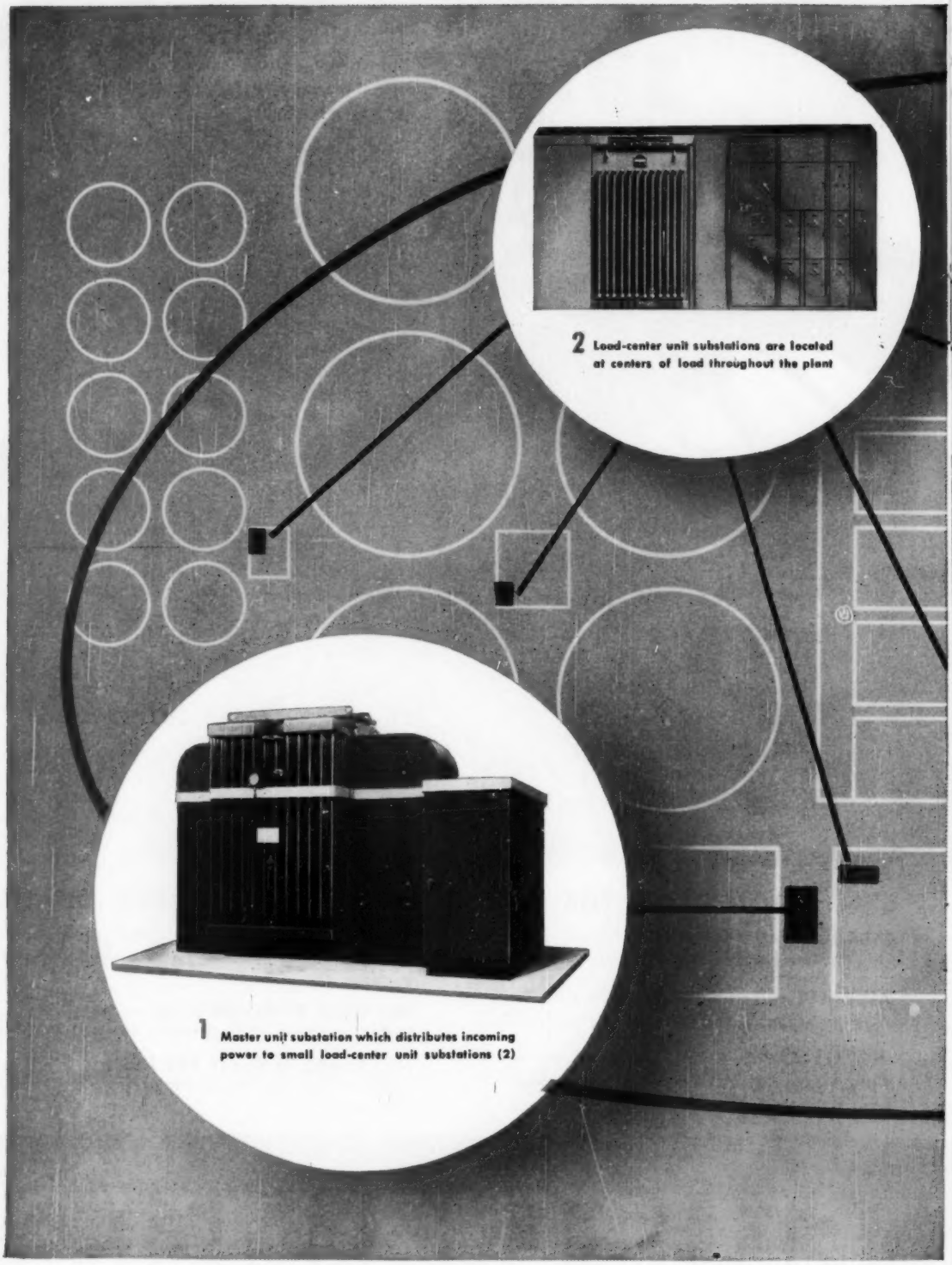
"ROLL-AWAY" MOLDBOARD — less power required to handle bigger windrows at faster speeds. Material is rolled, not pushed.

FULL CIRCLE REVOLVING BLADE — swings 360° . . . enables operator to grade either forward or reverse.

FULL RANGE OF BLADE POSITIONS . . . plus leaning front wheels, for handling all types of grading with ease.

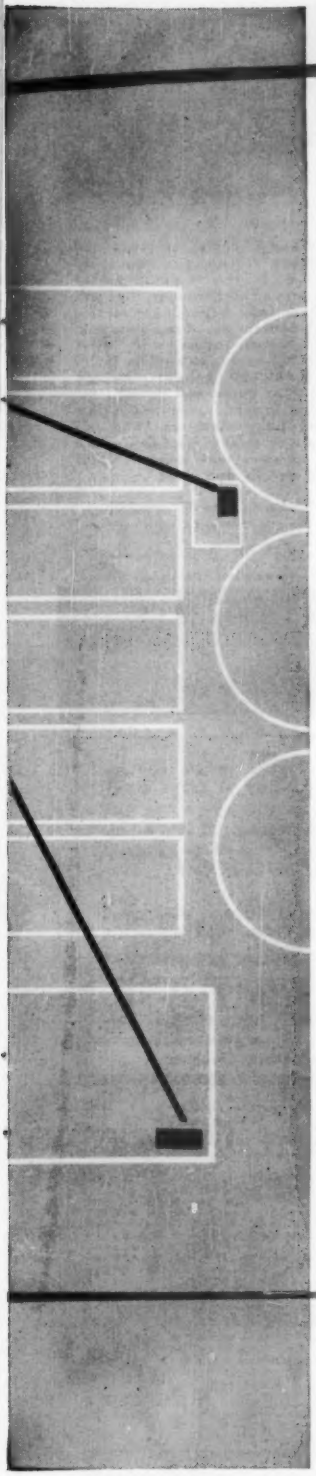
ALLIS-CHALMERS

TRACTOR DIVISION — MILWAUKEE 1, U. S. A.



2 Load-center unit substations are located at centers of load throughout the plant

1 Master unit substation which distributes incoming power to small load-center unit substations (2)



Specify LOAD-CENTER Power Distribution!

This modern technique offers more protection for men and equipment, saves space, keeps utilization voltage normal, simplifies maintenance, increases operating efficiency, streamlines plant appearance—ALL AT LOWER INSTALLED COST

Load-Center Power Distribution—the system which distributes incoming power at 2400 or 4160 volts from a master unit substation (1) to small load-center unit substations (2) located near the centers of electrical load—has received quick acceptance in the water and sewage fields because it offers these advantages over previous systems:

SAFETY— Metal enclosures house in one unit the transformer, switchgear or control, and interconnections; no exposed buses or bushings to create a hazard.

LESS SPACE— Unit substations take less space than an assortment of components because they are designed as a unit, interconnections are short.

EASY INSTALLATION AND MAINTENANCE— Unit substations are factory-assembled and tested, ready for immediate installation. Their enclosures protect against dirt and foreign particles, yet doors allow ready access to compartments for inspection.

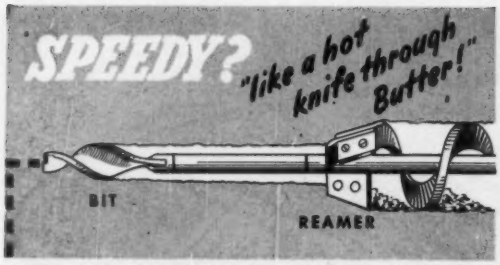
HIGH EFFICIENCY— By locating unit substations near the centers of electrical load throughout the plant, secondary feeders are kept short, power loss low. Load voltage stays up.

ATTRACTIVE APPEARANCE— Unit substations streamline your water or sewage plant because they enclose all power distribution equipment in one attractive metal enclosure. Cable connections may be made underground to eliminate unsightly overhead wires and poles. The small substations at the load centers may be combined with G-E Cabinetrol to give a compact, attractive distribution and control center.

You get all these features at LOWER INSTALLED COST than if you purchased the components separately! Your consulting engineer or General Electric representative will tell you more about Load-Center Power Distribution, and help you plan your entire electrical layout. Call today, or write for Bulletin GEA-3785, "Load-Center Power Distribution." *Apparatus Dept., General Electric Co., Schenectady 5, N. Y.*

CO-ORDINATED WATER-PLANT . . . SEWAGE-PLANT ELECTRIFICATION

GENERAL ELECTRIC



THE LOW COST WAY TO INSTALL ANY PIPE

Even the toughest earth formations, like rotten rock, are no obstacle to Hydrauger operations. In fact, Hydrauger has fewer limitations, especially in time and costs, than trenching; and it is more certain than pipe-pushing, particularly if the pipe is coated, wrapped or of large size.

Write for Catalog No. 8 TODAY!

HYDRAUGER CORP., Ltd.
681 Market Street
San Francisco 5, California

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HY-13c

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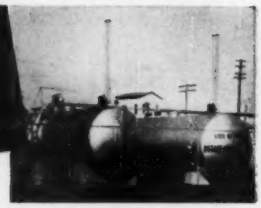

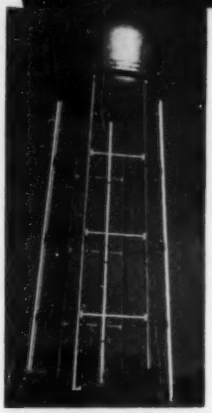

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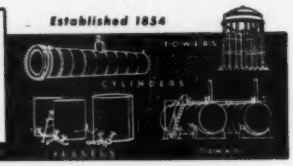

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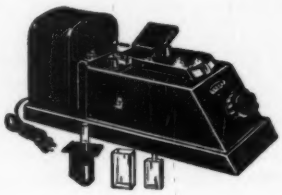

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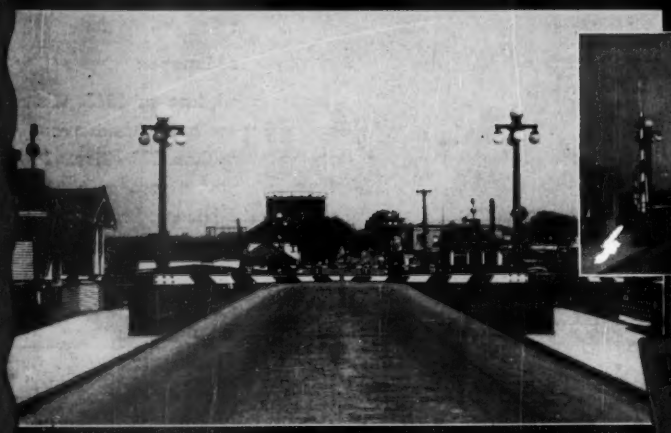

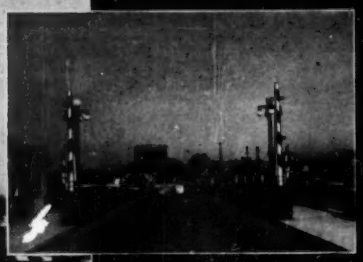

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How It Works

You write, wire, or telephone for information on what is considered best practice in handling a specific municipal problem, what other cities are doing about it, what the trend is, etc. For over three decades the International City Managers' Association has collected on a nationwide basis a vast amount of information which it now makes available to all cities on a subscription basis.

It Also Includes

1. In addition to replies on specific inquiries, subscribing cities receive from one to 12 subscriptions (depending on size of the city) to the monthly journal *Public Management* published since 1919, and devoted to the improvement of municipal administration.

2. Cities also receive from one to 10 copies of *The Municipal Year Book*, the authoritative resume of the activities and statistical data for more than 2,000 American cities, published since 1934.

3. One copy each of special information reports issued monthly. Partial list of recent reports:

Administration of Non-Property Taxes
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Trend Toward One-Man Police Cars
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Procedure in Establishing Merit System
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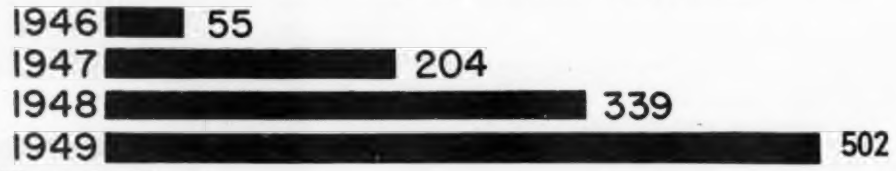
Subscribing Cities

Cities with populations from 1,000 to 400,000 in 45 states subscribe to this service. The number of subscribing cities on January 1 was 502:



What It Costs

MIS is available to all cities and towns on a subscription basis regardless of form of government. The fee varies with the size of the city from $20 for under 5,000 population to $400 for cities of 250,000 to 500,000. For more details write:

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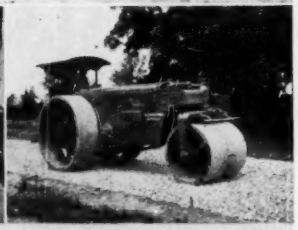
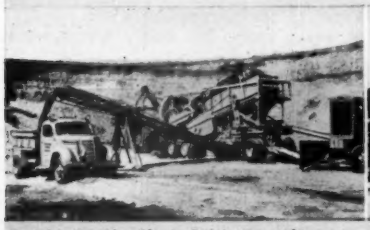
All-Wheel Drive and All-Wheel Steer make it easy for an Austin-Western Power Grader to do a superlative job of bank sloping.

Badger Convertible Shovel. ¾-swing design eliminates tail swing; makes it possible to use the Badger in close quarters; reduces swinging weight and definitely increases work output.

Model "40" Motor Sweeper. Fast, maneuverable, and economical in operation. No troublesome expensive conveyor or elevator to keep in adjustment and repair—dirt is thrown directly into the 2-yard hopper.

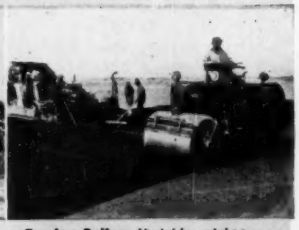


3-Wheeled Rollers. Made in sizes ranging from 6 to 12 tons. All have full length side plates for maximum rigidity; low center of gravity for smooth operation, and hydraulic power steer.



Portable Crushing Plants. Built in sizes and types to fit every production requirement. Equipped with matching Crushers, Screens and Conveyors, correctly balanced to deliver the maximum amount of crushed and screened aggregate in controlled sizes.

Stationary Crushing Plants. This limestone plant with its two Jaw Crushers and Roll Reduction Crusher is typical of the efficiency of design that characterizes every Austin-Western plant. Two men control the entire operation.



Tandem Rollers. Variable weight type—in 5-8 ton and 8-10½ ton sizes. Important improvements provide exceptionally smooth and steady performance on precision jobs.

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FOR WEEKS OR MONTHS

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This is how long you work in a year

WITHOUT PAY

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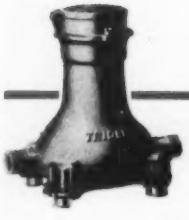
95% of water pumped	19 days	NO PAY
90% of water pumped	1 mo. 7 days	NO PAY
85% of water pumped	1 mo. 26 days	NO PAY
80% of water pumped	2 mos. 15 days	NO PAY
75% of water pumped	3 mos. 4 days	NO PAY
70% of water pumped	3 mos. 22 days	NO PAY
65% of water pumped	4 mos. 11 days	NO PAY
60% of water pumped	5 months	NO PAY
55% of water pumped	5 mos. 19 days	NO PAY
50% of water pumped	6 months	NO PAY

All signs indicate an upward revision of water rates. Yet many water works regard RATE INCREASES as a "last resort" . . . but here is one way to minimize them. Look to your neglected water meters. Just see that every domestic meter registers at least 90% at ¼ gpm. You may be astonished at the high percentage of unaccounted-for water going through neglected meters — and at the added revenue you recover when you get PAID for pumping it. Your Trident representative will be glad to tell you more about a meter-testing program, (also how easy it is to repair and modernize Tridents, the meters with interchangeable parts). *Call him in today.*



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NEPTUNE METERS, LTD., Long Branch, Ont., Canada

JANUARY 1949
Volume LXIV No. 1
The American City

In many cases the adequacy of a municipality's water supply depends on how well the near-by farmers manage their lands

SOIL CONSERVATION

Its Municipal Meaning

Erosion from upstream slopes has deposited six feet of sediment in Possum Kingdom Lake, on the Brazos River of Texas.

By H. N. SMITH
Regional Chief of Operations
Soil Conservation Service
Fort Worth, Texas

IN THE summer of 1948, the problem of water supply reached its most troublesome proportions for many cities of the Southwest. Some of the reported water shortages, of course, were the result of inadequate distribution systems; but in the majority of cities the cause of worry was a constantly dwindling supply.

In Texas, larger cities resorted to rationing to make sure the residents had enough water to keep indoor faucets running. Here and there, cities even shipped in water by tank car.

In many cases, the underground supplies have been dwindling for years. Increasingly heavy use of irrigation water has put agriculture in stiff competition with industries and with municipalities for good water.

When raindrops strike the ground, they become a part of the water supply for industry, for agriculture, for cities. What happens to these billions of raindrops after they fall is important.

Municipal and industrial water supplies in much of our country depend specifically on how well the farmer and rancher control raindrops. If the landowner misuses his land so that it seals over quickly when rain comes, he is hurting the city and the businesses that use industrial water. Land can be managed so that it will soak up much of the water which falls on it, or it can be handled so that it absorbs very little. When the latter course is followed, then the rainfall rushes off the land and quickly winds up in the ocean. Carried along as the water moves off the farm is a load of sediment.

In Texas, a lot of sediment reaches the Gulf, but much of it is deposited in Possum Kingdom Lake, Eagle Mountain Lake, Lake Dallas, Grand River Lake, Lake Texhoma, and the other reservoirs which cities and business interests have built to supply water and control floods. Those lakes and others in Texas and Oklahoma cost millions of dollars. The very presence of the lakes helped to attract industries needing water—lots of water—to operate. They lose value fast as sediment fills them.

W. D. Ellison of the Soil Conservation Service did significant research on this matter of municipal and industrial water supplies when he found that the falling raindrop is the force that loosens soil so that it can wash. When a raindrop falls from a cloud it gathers terrific force before it hits the ground. At the moment of impact it splashes. It breaks into parts and splatters upward and outward. If you don't believe it, look around the foundation of your house. There are particles of soil on it as high as 24 inches off the ground.

Cover Crops Prevent Erosion

Ellison didn't stop with just finding that raindrops splash soil and that then it is washed away easily. He found that a good cover of plants on a field keeps the raindrop from pounding against the soil. Where there's no pounding, there's little erosion. So he recom-

Contour plowing in Rio Grande Valley. The picture shows the excellent texture of the soil—measure of its ability to use irrigation water efficiently.

mended, and most agricultural technicians back him up wholeheartedly, that everyone do everything he can to keep a good protective cover of plants on all land possible. On cropland this means planting soybeans in the corn middles; putting winter cover crops of vetch and peas on land that grew cotton or peanuts last summer. It means handling wheat and sorghum stubble so that enough of the residue is left at the surface to intercept the falling raindrop before it gets in its dirty work. Wooded lands need to be harvested on a sustained-yield basis so that a forest cover exists on the soil all the time. Pasture and range should be stocked at rates which will keep a good stand of grass on the soil.

Mechanical Measures Also Needed

The record of sedimentation in lakes of the Trinity River watershed in Texas is no better and no worse than the record in other watersheds of Texas and Oklahoma. However, reports on sedimentation are available for the Trinity Lakes, so we'll have a look at their situation.

The major ones stack up like this: Lake Dallas was built for $5,281,000 in 1928. By 1943 it had lost 10% of its storage capacity. Sedimentation specialists estimate for that lake 49 more years of useful life.

White Rock Lake at Dallas was built for $765,000 in 1911. It has lost more than 28% of its storage capacity. It will be useful only 36 more years, a short time for a three-quarter-million-dollar investment to go by the board.

The $1,100,000 Lake Worth Reservoir, built in 1914 at Fort Worth, has lost 29% of its original storage capacity because raindrops got away from farms and ranches upstream. However, two large new lakes built upstream a dozen years ago act as settling basins for Lake Worth now. It'll be useful as a municipal water supply indefinitely.

Lake Waco, which supplies the city of Waco, Texas, with water, has lost 44% of its capacity through sedimentation in 18 years. Waco already has begun to look for a new source of water.

Flood-Control Appropriations

Congress recognized all this when it set up the flood-control appropriations for use on the Washita, Middle Colorado, and Trinity Rivers here in Oklahoma and Texas. It decided to spend money on major dams and then it set up a program which calls for spending $45,621,000 on upstream flood-control work. The Corps of Engineers is handling the major dams, and the Department of Agriculture Soil Conservation Service is working with the many local soil-conservation districts in doing the upstream work.

Cities in range areas needn't sit back and imagine that their reservoirs are safe from sedimentation merely because the water draining into them comes off grassland. A year ago the dam on Lake Fryer at Perryton, Texas, broke and all the water escaped. The lake was seven years old at the time yet when technicians examined the basin they found that enough sediment had washed in off the surrounding range land to occupy 15% of the original capacity. That's a little better than 2% sedimentation a year. Almost no soil erosion occurs where an excellent cover of grass exists, but when continuous over-use depletes grassland reserves, then range country washes. That happened in the case of Lake Fryer.

Groundwater

Lakes furnish a big share of the water supply for cities and industries in Oklahoma and Texas, but another major source, groundwater, needs consideration. About 289,000,000 gallons of groundwater are used daily for industrial purposes in Texas. Ground reservoirs provide all the water for 681 of the state's 837 public water supplies. Groundwater used for public and industrial purposes in Texas runs to about 25,600,000 gallons a day in the El Paso area; 112,000,000 gallons at Houston-Pasadena; 44,000,000 gallons in the Galveston-Texas City-Baytown sector; 12,000,000 gallons in the Lufkin-Nacogdoches vicinity; and 14,000,000 gallons for the cities of Fort Worth and Dallas.

The recharge of groundwater which adequate widespread soil-conservation measures achieve has not been given general recognition; nevertheless, the right kind of soil-saving and fertility-improving practices does help raindrops enter the ground, where they can be useful. Fairly well known are the benefits that have accrued to Pasadena, Calif., where Pine Canyon Dam is used to regulate release of water to the area of the San Gabriel River Valley, which serves as "intake" or recharge sector for the wells which supply the city water. The water flows down the valley, seeps into the soil, and finally is hauled up in the wells located at the city. The intake areas where groundwater gets recharged are generally sandy enough so that the surface moisture will sink right in. A number of such areas exist on the High Plains of West Texas.

How much soil conservation has benefited ground and surface water supplies is a matter which has not yet been measured accurately. Our best measuring stick is a look at the frequency of soil-conservation measures which cooperators of the soil conservation districts have put on their farms. By considering the cumulative effect of all those dovetailing measures, then we get a notion of what conservation has done to help our water supplies.

In the two states of Texas and Oklahoma, as of December 31, 1947, almost 85,000 farmers and stockmen operating more than 30,000,000 acres of land have begun installing needed soil- and water-conservation measures. Conservation measures needed to control erosion, maintain soil productivity, and conserve water have been put, already, on the equivalent of 14,500,000 acres.

In the aggregate, those accomplishments have helped a lot of raindrops enter the ground. They'll continue to help for years to come. Credit goes to the soil-conservation districts, for they have provided local leadership that has invited and secured willing cooperation of local farmers. Conservation the district way is farming the democratic way. Conservation the district way is the sort of conservation that will keep municipal and industrial water available in most localities that depend on surface drainage from farming areas.

Veterans Seek Purchase of Greendale

And the City of Milwaukee cooperates

A NEW type of non-profit corporation has been formed by Legionnaires to purchase and develop Greendale, the government-owned garden-city housing development eight miles from the heart of Milwaukee. This American Legion Community Development Corporation is attracting nation-wide attention because of its unique financing plan and its prospective cooperation between village, city, county, state, and national governments.

Designed to follow the basic principles of the Garden Homes venture by the City of Milwaukee after World War I, sponsored by D. W. Hoan, Mayor at that time, it provides for city or county participation in the form of a special preferred stock issue, made possible by state legislation promulgated by Mayor Hoan.

The Common Council of the City of Milwaukee, at a special meeting on December 7, 1948, unanimously approved the purchase of the entire issue of Class A Preferred Stock, and Wisconsin's Governor Oscar A. Rennebohn has pledged his assistance in making available to the corporation state funds accumulated by a special liquor tax for use in furthering veterans' housing. Thus the corporation is assured the complete cooperation and participation of city and state. This, coupled with the national government's authority to offer mortgage insurance, as well as yield insurance, represents an outstanding example of teamwork between the nation's largest veteran organization and all governmental bodies concerned, which should assure accomplishment of the objective — much-needed decent housing for veterans within their financial means.

Development Program

The corporation proposes to acquire the entire 3,000-acre property and its 635 homes, with its initial aim being the immediate construction of 1,000 rental homes for families of moderate income. The planning of the community would follow the principles expressed in the plan of the present town, and the corporation proposes to adopt the government's plans for development in their entirety. The eventual development program envisions an additional 3,000 homes, the majority of which will be for rent, which would bring the population of the community to about 15,000 persons.

The American Legion Community Development Corporation does not propose to dispossess any of the present residents of the community, and has promised that all families now living in Greendale will have priority—with first preference to veterans' families—in either the rental or purchase of one of the existing homes. Negotiations are under way with outstanding planners and builders to undertake the developmental work included in the comprehensive program. Management and financial administration will be placed in the hands of competent individuals thoroughly experienced in large-scale housing and real-estate operations.

The corporation's purchase plan will be predicated upon the provisions of the National Housing Act, which enables government-insured financing of 90% of the purchase price through the Federal Housing Administration. Similar insured mortgaging under FHA authority for the construction of the new housing will be utilized.

It is the intent of the corporation to dedicate, without monetary consideration, all present public parks and greenbelt areas and structures to appropriate municipal entities, and to make further similar dedications in the future as the development of the property defines the boundaries of such areas. All necessary site improvements, such as roads, streets, walks, street lighting, and storm and sanitary sewers, would be built at the corporation's expense and dedicated to the public upon completion.

DURING the past several years the Federal Government has employed experts in the field of planning and research to determine the best plan for the development and disposition of Greendale, as well as its sister communities—Greenhills, near Cincinnati, and Greenbelt, near Washington, D. C. The plan offered by the American Legion Community Development Corporation, with the cooperation of the City of Milwaukee and State of Wisconsin, assisted by the Federal Housing Administration's insured financing program, indicates a program whereby veterans may be able to acquire and develop Greendale in a manner that will safeguard the planning-demonstration values of the community, and produce decent homes for the nation's war veterans at prices they can afford.

Major Objectives

The corporation's major objectives, as stated in its six-page brochure, are as follows:

- Build good, attractive housing at modest rentals and sales prices for the inadequately housed families of veterans of World Wars I and II. (There are now said to be over 17,000 veterans' families in the Milwaukee area in need of housing.)
- Plan a combination of house-and-lot-arrangement pattern, street and walk requirements, utilities, open green areas, and shopping and school facilities, to result in the lowest cost without sacrificing livability, convenience, and charm.
- Produce an ultimate community development that will conform to the present character of the town, with open vistas of the surrounding countryside, to express a new design for modern living amid tranquility, spaciousness, and comfort.

Financial Set-up

The articles of incorporation provide for three issues of stock: (1) Class A Preferred Stock in the amount of 3,000 shares at $100 per share, totaling $300,000, carrying a 2½% dividend, to be issued to the City of Milwaukee; (2) Preferred Stock, Second Issue, 3,000 shares at $25 per share, totaling 75,000, with a limited dividend of 6%, to be purchased by Greendale homeowners,

For additional information regarding Greendale, with reproduction of plan and photographs, see "Greendale and the Future," by Clarence S. Stein, in THE AMERICAN CITY for June 1948. Reprints are available.

incorporators, and American Legion Posts; (3 Common Stock, 2,500 shares at $50 per share, totaling $125,000, to be purchased by tenant-residents of the community.

The Class A Preferred Stock will have prior claim to dividends at the rate specified. No dividends will be paid on any other stock until 10% of the corporation's profits have been set aside to establish a sinking fund for the early retirement of the Class A Preferred Stock.

Before the declaration of any participation in earnings to the common stock, an operating-contingency-reserve account in an amount of not less than $50,000 is to be established. Common stock will share in the net profits of that portion of the corporation's business which is concerned solely with the leasing of residential and commercial property and land, and such distribution will be made in the form of a retained refund, computed by determining the ratio between the rental payments and the cost of operation of such income-producing property. Such earnings will be shown on the books of the corporation, and can be used for the eventual acquisition of a home by its tenant.

The provision for the early retirement of the city-owned preferred stock will put control of the corporation in the hands of tenant-residents and homeowners of the community. To assure the non-profit principles of the corporation, no stockholder, officer, employee, or agent of the corporation shall share in the distribution of assets upon the dissolution of the corporation in an amount greater than the bona fide obligations of the corporation as evidenced by the face value of shares or any unpaid accrued dividends or debts of the coporation to the individual. Upon the dissolution of the corporation, any remaining assets above the requirements for dividends, profit distribution to common stockholders, and requirements to meet all other existing obligations of the corporation shall revert to The American Legion, Department of Wisconsin, to be used in the promotion of the objectives and purposes of the Legion.

For Urban Redevelopment Through Leveling Off Land Costs in Blighted Areas at Public Expense

By PAUL WINDELS, *President*
Regional Plan Association
New York, N. Y.

THE most important single purpose of a master plan must always be to make normal and wholesome family and community life possible within the city. No city can rest on a firm foundation unless this is the basic fact of its existence. In the effort to achieve it, the greatest difficulty to be over come is congestion—congestion of people, of buildings, and of traffic. We must aim to open up the overbuilt, overcrowded centers of the city to sun and air, to greater freedom and ease of movement, both for people and vehicles; to restore in the city the smaller and more wholesome neighborhood pattern, while preserving it in the peripheral areas which now receive the major impact of population increase.

Magnificent progress has been made in providing better housing for people formerly living under slum conditions. But we must admit that these projects are not the final answer. We must be careful that the endless reproduction of the same type of housing does not create in the older areas of the city a regimented, institutional appearance.

No Modernize City Planning

Our present policy may produce some better housing, but it is not producing an intelligently planned city. A balanced distribution of population must always be the essential element of any effective city plan, since it is the best way to avoid and overcome the stresses and strains on every part of our municipal machine which result from congestion in some areas and blight in others.

We have tried to surmount the great barrier to progress in replanning and rebuilding—high land costs where the congestion is greatest—by tax exemptions or by permitting a repetition of excessive concentrations of population in both public and private projects. Tax exemption deprives the city of badly needed income. Excessive concentrations of population perpetuate the unbalanced demand on public facilities which we are seeking to correct and inevitably create new blighted areas.

Should we not meet this problem by a policy of absorbing and liquidating the peaks in land costs in blighted areas, scaling them down and writing the difference off as a public loss and as an essential prelude to sound city planning so that, for the purpose of new construction, we can be free to relate the value of the land not to past congestion but to the desirable city plan of the future? Public assistance to slum clearance would thus become not only an aid to housing but also, and equally important, would open the door to a real opportunity to modernize our city plan.

Such land can then be made available to private and institutional capital for rebuilding according to the development requirements of the city. It could either be resold or leased for long terms, subject to the controls now provided in our urban redevelopment laws which require (1 approval of project plans and (2 financial limitations so that there be no private speculative profit, only a reasonable return and amortization.

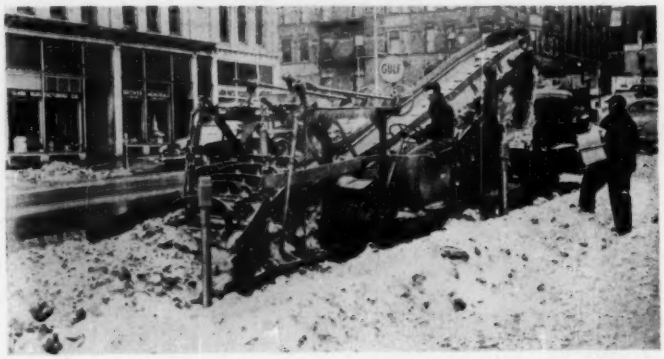
Such projects can be required to pay full taxes and because of modernization would also reduce the city's annual operating budget. This will be an expensve process in its initial outlay, but we may as well face the fact that it is the only practical way to eliminate over-concentration and unbalanced distribution of population which lie at the root of our difficulties. Unless we invest public funds for this purpose, we must face an endless and menacing drain on our financial resources by continued mass shifting of population as well as all the wastes and discomfort of present-day urban life.

If we accept the restoration of the neighborhood unit in the congested and blighted areas as the objective and the leveling off, at public expense, of land costs as the method, an approach to a city plan has been opened up and the succeeding steps become much clearer.

Excerpts from Mr. Windels' presidential address at the 19th annual meeting of the Regional Plan Association, held December 9 at the Association's headquarters, 205 East 42nd St., New York. The complete address is available on application to the Association.

Grand Rapids Perfects Winter Safety Program

By GEORGE W. WELSH*, *Mayor*
Grand Rapids, Mich.



Rock salt used on Grand Rapids streets kept the snow mealy and enabled city crews to do a fast and complete removal job, even after a heavy snowfall.

NO ONE in the North Central States needs to be reminded that last winter was the coldest, snowiest, and longest in many years, with 2 feet or more of snow and thermometers that stayed at zero. Although the normal snow fall in Grand Rapids is 54 inches, last winter almost set a record with 71 inches.

To keep traffic moving safely in such weather, we treated the roadways to generous sprinklings of sodium chloride in order to stop the freezing and give traction to vehicles. Cities and counties with the foresight to have a good supply of rock salt on hand saved their taxpayers' tempers and money.

Grand Rapids has many steep grades that are conducive to serious winter accidents. Situated for the most part in Grand River Valley, the city has its full share of hills and some to spare—140 of them, with lengths varying from a block to a half a mile. With the zero bench-mark altitude of 589 feet, the surrounding terrain undulates from a low of 581 feet to a high of 799 feet above sea level. Because of an unpredicted variety of temperatures during the cold months, freezing rains combined with greater than normal street gradients create many vehicular and pedestrian difficulties. In weather such as we have here, scrapers and plows are of as little use as teaspoons, so that the sand and salt crews provide the only effective method of combatting storms.

City Has Five Winter Months

When Old Man Winter starts he doesn't consult the calendar, but may let out his first icy blasts before the middle of October, or he may defer his cold wrath until the middle or latter part of November. Regardless of when he starts, you can depend upon him to deliver five months of inclement weather.

To combat it, Grand Rapids has developed a meritorious system of snow removal and of de-icing city streets. A watchman is on duty at the City Highway Building every night. It is his job to watch the weather and snowfall and to report conditions to the Highway Superintendent by telephone. If the latter decides that the situation calls for action, he phones his assistants, who in turn call the crews. They assemble at the Highway Building, where two men are teamed to work together, one as driver and the other as helper. It is customary to assign the men to the same districts time after time because, as they become familiar with the streets, they can do a better job in a shorter time than a new crew could.

Mechanical equipment is always in readiness, gassed, oiled, and in repair, waiting to be rolled out of the garage. We have 80 separate pieces of snow-fighting equipment. In detail they are:

- 2 Athey snow loaders, belt type
- 1 Haiss loader bucket type
- 12 Federal trucks, 6- to 7-ton
- 4 International trucks, 4- to 6-ton
- 14 Ford trucks, 1½- to 2½-ton
- 2 Galion graders (large)
- 30 Snowplows mounted on front-end trucks
  - 14 Ross R-21
  - 8 Ross R-22
  - 8 Baker
- 14 Pneu-Hydro underbody scrapers
- 11 Sanders rotary type (own make)

Stock piles of coarse, highly abrasive sand are kept dry by adding rock salt to the pile. A loading bin holding 80 cubic yards is the first objective to the truck and spreader. The loading of 3 to 4 yards requires but 90 seconds, and then the truck proceeds to the salt-loading bin, where 25% (by weight) is added to the sand. The sand and salt are automatically mixed as the spreader goes into action. Daytime procedure is the same as at night, and the job is done whenever traffic conditions warrant it. For ice and snow removal the city is divided into 16 districts, including the main trunk lines which are handled separately by four crews.

For snow removal the crews are called out in the same way. The plowing districts, however, number 27 and cover 407 miles of streets and 600 intersections. To complete the plowing job, the trucks must travel over 3,000 miles for each snowfall.

The plowing alert is sounded when 2 inches of snow have fallen, and the crews stick to the job until the storm is over and all streets have been cleared. This is usually 12 hours after the storm abates. Here, too, the crews are assigned regular districts because they have learned the bad spots in the territory and cover the ground more quickly than newcomers could.

Although an ordinance prohibits street parking after 2 a.m., many cars are left at night on the streets and hamper the crews. This situation is improving, however, as citizens are learning that if their cars are parked in front of their houses the snowplow goes around them, leaving them in a very bad spot.

After Plowing Comes Loading

After the plowing is finished, the actual snow-removal program gets under way; two snow loaders begin scooping up the snow from 30 miles of business district and deposit it in trucks to be hauled to a bridge over the Grand River, where it is dumped and carried down the river to Lake Michigan. The snow loaders in the outlying districts send their trucks, heaped above the sideboards, to the nearest city dump.

The Highway Department receives fine cooperation from the Police Department, which gives notice of especially slippery corners.

Grand Rapids is proud of the winter condition of its streets. Compliments from business men and householders pour into the City Hall after every storm.

* President, United States Conference of Mayors.

The Gradall is at work digging a trench for a service-line replacement. Note that the existing line has been uncovered without any damage to the old pipe.

More Services for Cambridge, Mass.

Water Department embarks on extensive service-replacement with mechanical equipment that keeps labor costs low

WHEN taxes go down, industry is likely to come to town. And when a city has been active for more than three centuries, water services grow old and have to be replaced. These two factors have produced a big program in the Cambridge, Mass. (population 118,075—1940 census), Water Department.

Taxes have gone down in Cambridge. They started down after Colonel John B. Atkinson took over the reins of the city managership in 1942. The people selected the city manager form of government in a vote held in 1940, and Colonel Atkinson was their first manager. As the result of his work, the tax rate has dropped $10.50 per thousand in the face of increased demand for service and rising costs of service.

This set of copper pipes shows the customer the type of pipe he gets.

And as a further result there has been a steady influx of new businesses into Cambridge, attracted by the lower tax rates and greater municipal service.

A Long Record of Service

The city's water supply has a long record of service, dating back to 1642, when the town spring was dug in Harvard Square. The service began to resemble a modern water works in 1865, when it was put on a true city-wide basis. Since 1865, however, there have been a lot of services laid in the ground, and a lot of improvement in the type of services used by well-organized water departments. The adequacy of the supply is not particularly a problem in Cambridge. But the placing of

service is. Superintendent McGuiness finds himself assigned the task of supplying new services and replacing the old, leaking ones along with his other work.

Cambridge has four regular installation crews, which are fully equipped to renew old services, fire supplies, and domestic services. Two of these crews have been specially trained in the laying, maintenance, and repair of large service mains. About half the installation work consists of replacing old lead-lined and galvanized iron service with copper.

Equipment for Diversified Use

Superintendent McGuiness builds his work around mechanical equipment that gives a good account of itself on service construction, but can be turned as well to other uses during the year. Principal equipment used in the work is a ¾-yard Gradall, a machine that looks awkward but that can be handled with the care and accuracy of a man digging with a shovel.

The Gradall is truck-mounted so that it can be moved about easily. It has a telescoping boom made in a triangular shape. The boom is held in a circular mounting which permits it to be tilted 45 degrees each way from the horizontal. All movements are hydraulically controlled.

Works With Minimum Interference

The bucket has a long reach and it has none of the boom-and-derrick features of the standard shovel that at times interferes with the branches of trees. The Gradall bucket can slip easily under the tree branches and do its work with a minimum of interference. Moreover, with the control the operator has, he is able to "feel" the presence of other underground services such as gas, sewer, and other water lines. In one typical area, the operator laid a trench through 40 other services, of which he broke only two. The two he damaged were both badly corroded galvanized iron pipes that would have had to be replaced shortly anyway.

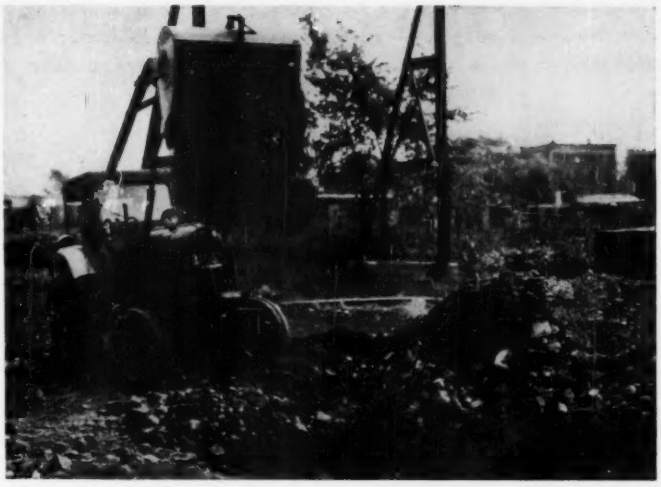
New services are all copper. This took a certain amount of educating the crews to accustom them to this type of pipe. To assist the customers in visualizing the new service and its merits, Superintendent McGuiness has made up a board showing the sizes of pipe and their inside diameters.

Installations Crews

The two installation crews are made up of six men each, which are divided into three pairs — two men dig the trench, and the foreman and his assistant make the tap and install the supply. At the completion of the same, the same two men backfill. While this work is being performed, the other pair is breaking ground on another job. This means that the foreman and his assistant supervise and perform the highly skilled work on both jobs. It is not unusual for one crew to install as many as six supplies in one week.

For backfilling, an Oliver tractor is used with a front-end shovel loader. Both the tractor and the Gradall receive many other assignments during the year. The Gradall frequently is called upon for general excavation that it does easily, and the tractor is used for many loading operations. As in general practice, 105-foot, two-stage compressors are used for breaking ground in the street at the beginning of each job.

The use of equipment like this is only one of the reasons Manager Atkinson can cut Cambridge's tax rate in face of present operating costs. But it is typical of the sort of thinking that the city now enjoys.



The Oliver tractor makes the backfilling easy.

The Gradall is frequently used for general excavation.

Novel arrangements for handling sludge and utilizing heat are features of plans designed to make the city's river and reservoir a safer and more pleasant recreation area

Knoxville's Sewerage Program

By J. BENJAMIN VERHOEK
Principal Assistant Engineer
Greeley and Hansen
Consulting Engineers
Chicago, Ill.

THE City of Knoxville, Tenn., has passed another milestone along the road towards the reduction of the pollution in the Tennessee River. The first step in the program was completed in December 1945, when the Frederic R. Harris Engineering Corporation and Greeley and Hansen, engineers, submitted a joint report on the pollution of the Tennessee River and sewage treatment for Knoxville. The second step, started when these firms prepared drawings and specifications for the sewage-treatment project. The two remaining steps, not yet started, cover financing the work and actual construction.

Knoxville (population 160,000—1940 census) lies on both sides of the Tennessee River in the backwater from the Fort Louden Dam. The new sewage-treatment project will make the river and reservoir satisfactory for fishing, swimming, boating, and power uses, and is a part of a larger program to reduce the pollution in the entire TVA area.

Two Plants Needed

It appeared advisable to bring most of the sewage by gravity or force mains to the river bank—a tributary known as Third Creek. A small portion of the city and the adjacent area to the northeast will be served by a second small treatment plant on the Holston River at the outlet of Loves Creek.

The Loves Creek treatment plant will serve 7,600 people; that at Third Creek, 261,000. Industrial wastes will increase the equivalent population at the Third Creek plant to 300,000.

The Loves Creek treatment plant will handle domestic sewage only. At the plant, there will be a small pumping station which will have, as a wet wall, a small detritus tank. The detritus tank will serve as a grit-settling basin. Sewage containing the grit will be pumped from the hopper at a constant rate through a small grit chamber, and thence into an Imhoff tank. The balance of the sewage will be pumped directly into the Imhoff tank.

This type of treatment requires little operating attention, an important factor, since the plant is small and relatively remote. The sludge will be dried on sand beds. Prechlorination facilities will be provided, so that, although the treated effluent will still contain about two-thirds of its biochemical oxygen demand, it will be practically free of pathogenic bacteria.

Third Creek Plant Interceptors

For the major portion of the city, a series of intercepting sewers will bring the sewage to the Third Creek Treatment Plant site. Sewage from the area north of the river and east of the plant will flow by gravity through an interceptor to the site. Sewage from the southwest area will be brought by gravity to a pumping station, and from there, pumped to the treatment plant. Sewage from most of the city south of the river will flow, by gravity, to a pumping station and be pumped across the river into the north-side gravity interceptor. The intercepting sewers and force mains will have sufficient capacity to serve until 1995.

Designed for the Year 1995

The Third Creek sewage-treatment plant will provide primary treatment and chlorination. The structures, however, will be arranged to provide chemical precipitation later, if necessary. The portion of the plant that cannot be readily enlarged has been designed for an average flow of 50 mgd and a maximum flow of 86 mgd, the flows expected in 1995. The rest of the structures have been designed for an average flow of 36 mgd and a mamixmum flow of 58 mgd.

The principal structures will consist of a two-unit grit chamber, four settling tanks with a raw-sludge pumping station, a Parshall flume for the quantity measurement, three sludge-digestion tanks with a sludge-control building, elutriation tanks for sludge preparation prior to vacuum filtration, a chlorine building and chlorinating equipment, and a main building. The main building will house the bar screens and grinders, the wet well, pumping equipment, sludge filtering equipment, offices, a laboratory, locker rooms, and an auditorium.

The pumping equipment will handle all of the sewage from the northside gravity interceptor, together with that pumped from the southwest interceptor. The sewage pumper from the remaining area south of the river will go directly to the grit chamber. The pumping equipment will consist of two electric motor-driven pumps of 25-mgd capacity each and two gas-engine-driven pumps of 17.5-mgd capacity each. The sewage will be pumped to two detritors 28 feet square. From the detritors, the sewage will flow by gravity to the settling tanks. There will be four settling tanks 144 feet long, each tank having two channels 20 feet wide and 13 feet deep.

Sludge Handling

A novel arrangement for handling the sludge from the settling tanks has been devised. In order to maintain, as nearly as possible, an even production of gas in the digestion tanks, the sludge should be added to the digestion tanks continuously. However, the plant is not large enough to warrant continuous operation of the collectors. Therefore, the equipment will be run at periodic intervals and the sludge drawn by gravity into a sludge well. From this sludge well, reciprocating sludge pumps will pump at a continuous rate into the digestors.

Scum Handling

The scum from the settling tanks will be collected in rotating scum troughs at the opposite end of the tanks from the sludge-pumping station. It will then be forced through open channels by means of water jets into scum manholes near the pumping station. Each scum manhole is so designed that the scum can again be separated from the water used for transportation and then carried to the pumping station, where

Will Reduce River Pollution

it will be pumped with the sludge into the digestion tanks.

Three digestion tanks are planned, two with fixed covers, and one with a floating cover. This floating cover will make it possible to withdraw and add sludge at different rates and thus increase the flexibility of operation. Provision is made to heat the sludge with gas-fired heat exchangers and to recirculate the sludge in each tank, either independently or simultaneously. It is estimated that there will be sufficient gas, not only to heat the tanks, but also to operate the gas engines for driving the engine-driven sewage pumps.

Vacuum Filtration

The sludge, after being elutriated, will be dewatered on two vacuum filters. Water will be taken from the Tennessee River for elutriation and also for operation of the chlorinating equipment. No facilities will be provided for further drying or incineration of the sludge, as it is believed the sludge can be disposed of in cake form. Here, again, as at Loves Creek, sufficient chlorinating equipment will be provided so that the sewage can be disinfected. Facilities are provided for either prechlorination of post-chlorination of the sewage, although it is expected that prechlorination will be followed if river conditions dictate.

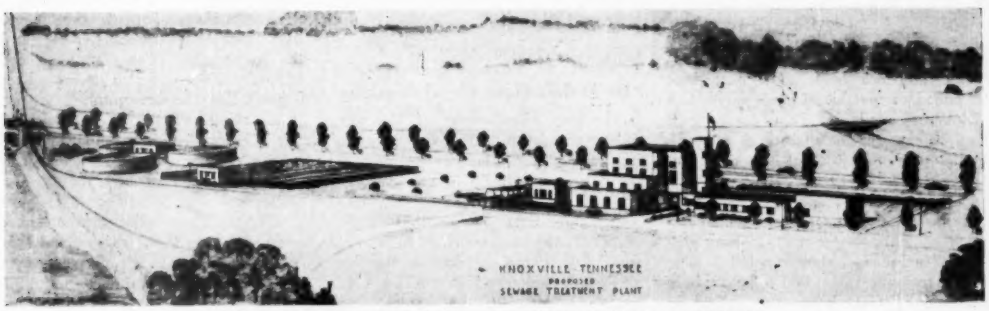
One of the most interesting developments at this plant is the arrangement made for salvaging heat from the engines. It is customary to use this heat for heating the sludge, but in the case of Knoxville, the sludge-digestion tanks are located at considerable distance from the gas engines and therefore it would not be economical to transport the heat this distance. On the other hand, the jacket water in the engines is not of high enough temperature to permit its use for conventional building heating, but will be hot enough to serve radiant heating panels in the floor of the office and laboratory, or east portion of the building, which will be built without a basement. Therefore, this system of radiant heating will be used in the east portion of the building to salvage the heat in the engine-jacket water. During those times of the year when the heating system will not be needed, the jacket water will be passed through coils in the wet well for cooling.

The major, or west, portion of the building, however, including the garage, filter rooms, machine shop, and pump rooms, will have too much volume compared to the floor area to be heated with hot-water coils, and therefore steam heating will be the most economical method for these areas. To supply this heat, combination exhaust silencers and boilers will be installed on the exhausts from the engines to recover the heat in the exhaust gases, and since these boilers will not produce enough steam on exceedingly cold days, an auxiliary combination gas-and-oil-fired steam boiler will be installed to supplement them. By an interconnection of the hot-water radiant-heating system and the steam-heating system, it will be possible, also, to use the exhaust boilers and gas-and-oil-fired boiler to heat the office and laboratory portion of the building. Recovery of all available heat from the engines will be absolutely essential, because there will not be gas enough to heat the sludge, operate the engines, and also operate completely independent gas boilers.

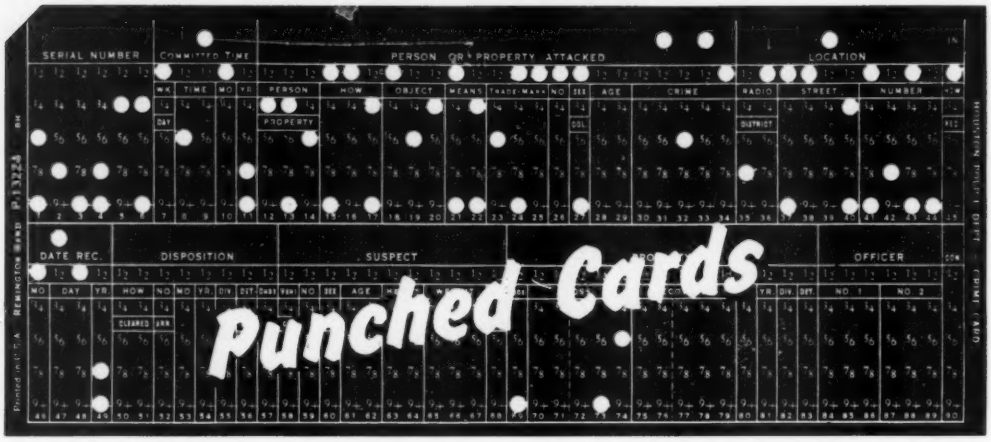
Cost Estimate

The estimated cost of the entire program amounts to $3,991,000. This total is made up of $365,000 for outlying pumping stations and the Loves Creek Treatment Plant, $1,604,000 for the Third Creek Treatment Plant, and $2,022,000 for the intercepting sewers.

The work has been handled under the general direction of Leonard C. Bailey, City Engineer. J. W. Elmore is Mayor of Knoxville, and W. W. Mynatt is director of Public Service.



An artist's drawing of the way the Third Creek plant will look.



Give All the News That Fits the Crime

By B. W. PAYNE
Chief of Police
Houston, Texas

SPECTACULAR crime detection is often aided by a system of records and statistics invisible to the public. The success of such work depends upon the *continuity* of the records system. That is why the City of Houston recently purchased, instead of hiring, $16,500 worth of Remington Rand punched-card equipment, including a numerical tabulator, a counting sorter, and two automatic punches. Against this expense is the fact that loss by thefts during an average 5½ days exceeds $16,500 in this city of half million inhabitants. The decision to buy was easily reached because of an earlier experience when equipment was hired and discontinued after only one year because of a change in administration.

Heavy Job for a Small Force

There are 84 square miles within the city limits of Houston. The city is divided into 10 districts and each district into four beats. For each beat a squad car could be used—if enough cars were available. There are only 20 police cars on the streets at any one time. Because 40% of the city produces 72% of the criminal offenses, selective enforcement is necessary. While the city has a resident population of 500,000, the metropolitan district includes 750,000 people. The FBI recommends 1,000 officers here instead of 400. Thus any saving in manpower is important.

When manually tabulated by clerks, 16 days were needed to prepare the Houston monthly FBI report. Now, three hours after the last card is punched, on the second day following the close of each month, the reports are completed in detail according to the seven divisions of Class 1 crimes. That report can be mailed on the second day of the month, although the FBI allows a delay of a full week.

Any combination of data is immediately available from the punched-card file. The longer these files are accumulated and summarized, the more valuable the data that can be produced on call. Cards for any type of report or analysis can be sorted from the mass at the rate of 25,000 in an hour. From these, the final reports are tabulated at the rate of 100 lines a minute. Thus, for instance, points of heaviest criminal activity are quickly determined. Resulting action is then based on facts, and complaints from people who may consider one district more dangerous and under-protected than others can be more convincingly handled.

He Didn't Have Good Records

The new effectiveness of Houston's police records has produced some amusing incidents. A burglar arrested by the police department in a neighboring city was suspected of having also committed some burglaries in Houston. The chief of the neighboring force sent some jewelry which was in the burglar's possession to Houston to see if it could be identified as having been stolen in Houston. To his surprise, he was informed that the jewelry had been stolen in his own bailiwick; he was further given the names and addresses of those from whom it had been stolen. All this information came from a report of the burglary he had previously made to the Houston Police Department.

Every complaint is typed, coded, and a tabulating card punched to show the serial number, the time, the crime, how performed, object, means, trade marks, victims, sex, age; the location as to district, street number, and how the report was received; date received, disposition, how cleared, arrest; physical description of the suspect, sex, color, age, height, weight, complexion; vehicle used, etc.

Breakdown of Data

Police records and statistics that are not instantly available in detail are usually too late. Production and correlation depend on the development of proper codes for listing the original data. Nearly six weeks were spent in the preparation of a completed code of over 2,000 different items. These codes follow the same numbers as used in the official FBI report, which simplifies all special reports and keeps tabulations uniform with other cities using similar methods. In describing occupations alone, over 500 different ones were developed. Every officer was coded, of course, as were 7,000 streets, and every district and beat. Property attacked was classified as public, semi-public, stores, offices, vehicles, etc. Under burglary, there were listed 25 methods of

attack, 50 kinds of instruments used, 200 different *modus operandi*, and 25 methods of burglarizing safes. Under "personal attacks" were coded 25 methods, 20 types of negligent homicide, 30 means of attack, 20 motives for attack, and 10 reasons for suicide. In robbery cases, 150 *modus operandi* were listed, as well as 87 ways of carrying out a swindle, 75 methods of attack, 33 means of attack, and 100 *modus operandi* on theft alone. There were 50 ways of passing worthless checks and forgeries, 300 different kinds of attack and property offenses, and 45 objects of attack in automobile and 30 in bicycle cases. Ten ways of clearing cases, 20 ways of making releases, and six different property classes were coded.

These complete codes are a positive aid in detecting and solving crimes. For example, in cases of robberies of filling stations, information as to robberies carried out by similar or related methods and tallying in description as closely as possible to the latest reported cases can be promptly furnished.

To give another example: it is easy to turn up at once every case of a drug store entered by the breaking of a small window at the rear, for the purpose of securing narcotics. Criminals leave their trademark in many ways, and along with the crime laboratory, the record bureau often uncovers vital information to track down the criminals responsible. Often simple association of similar cases solves them all.

Staff Required

The tabulating is handled by a captain in charge, with the help of two hours' time of a coding clerk, and the full time of two punched-card operators who were trained on the job without the loss of operating time. It would, however, have required a great number of clerks to do this same job without tabulating equipment.

Fire Insurance Economies Not Made By Rates Alone

FOR some reason or reasons municipally owned buildings do not burn down in the same proportion as those privately owned. Ten years ago the impression got abroad that fire-insurance rates on municipal properties were too high. The American Municipal Association's survey of premiums paid and fire losses paid in nine states revealed only 12.7 cents losses against the premium dollar.

The latest study in this field has been made by The New Jersey State League of Municipalities. For purposes of fire-insurance rating, public buildings and educational buildings are classified separately. Public buildings include "city and town halls, court houses and state capitol buildings, hospitals, sanatoriums, orphanages, alms houses, homes for the aged, asylums, penal institutions, police and fire department stations, and auxiliary buildings on premises (except dwellings and their outbuildings and farm barns and their outbuildings)."

During the five years 1942-1946, premiums earned by insurance companies (or premiums paid by municipalities on public buildings) in New Jersey totaled $2,118,036, on which losses amounting to $397,110 were paid. Thus the over-all loss ratio on these buildings was 18.7%, ranging from 14.2% on brick protected buildings to 50.6% on brick and frame unprotected buildings.

On the basis of these figures, the Fire Insurance Rating Organization of New Jersey recognized the justification of a revision downward. An interim reduction of 20% on brick-protected public buildings and 10% on frame-protected and fireproof buildings has been approved. When a more detailed compilation of fire-loss experience has been made by the Organization, a further reduction in rates may be expected.

Set Up a Modern Insurance Program

In many articles during the last ten years this magazine has shown how substantial economies can be achieved within the existing rate structure. The contention has been that lower rates on a slovenly municipal fire-insurance program is not the way to true economy. The first job is to clean up or streamline the programs. Get *all* the municipal properties insured—and only once. Study the blanket-type policy which guarantees that all the buildings are covered even though one or more have been overlooked in the listing. See that compensations are made for higher (or lower, should that phenomenon ever occur) construction costs. By all means there should be lower rates whenever justified. Fortunately, fire-insurance rates, like electric-power rates, have been decreasing for decades. But don't think that lower rates alone mean lower insurance costs. Your municipal fire-insurance cost can continue to rise, through lack of skillful periodic attention, despite more favorable rates.

Don't include uninsurable properties or overinsure any property.

Investigate coinsurance.

Secure lowest rates including credits allowed.

Have a dependable insurance man advise on improvements which bring reduced rates, and interpret rating-bureau rules. An extra value will be reduced fire hazard as well.

Write the insurance for a five-year period at only four times the one-year premium, with one-fifth the insurance due each year.

Make sure that the building's equipment of fixtures and systems—heating, lighting, ventilating, refrigerating, laundry, etc.—is included in the valuation of the building and not of contents.

In the case of a proposed new building, consider fire-insurance factors both in the design and in the location of the building. Have your architect consult with the state rating bureau.

Diesel Engines and Their Water Supply Use

SLOW-speed diesel engines can serve the dual function of a standby, or a continuous prime mover in pumping stations. This was pointed out by David Gallagher, of the Public Works Division, Worthington Pump and Machinery Corporation, Harrison, N. J., at the recent New England Water Works Association meeting held in New York.

While gasoline engines and high-speed diesel engines would be satisfactory for standby service, they are not recommended for continuous *duty* as a prime mover.

A modern supercharged diesel engine will supply 14 kw-hrs. per gallon of fuel oil. With this as a base it is not difficult to calculate the operating cost knowing the cost of fuel oil in a particular region. The fuel oil costs can be reduced three to four cents per gallon by using heavier, less-refined crude oil, centrifuging it and heating it prior to using it in the engine. However, this entails a slightly larger capital outlay.

A diesel-engine-driven centrifugal pump has an inherent advantage in the ease with which variable speed operations may be obtained. A simple adjustment, manual or automatic, permits sufficient change in pump speed to provide for varying system demands.

To illustrate the application of diesel engines to water-works plants, Mr. Gallagher described in his talk the history of the equipment at the Fall River, Mass., water-works plant.

SELF-HELP, PROFESSIONALLY AIDED

Town planning

FOR ROCKY HILL, CONN.

ROCKY HILL, suburban to Hartford, Conn., is growing whether it wants to or not. Since 1910, it has been under increasing pressure of residential and business expansion as a part of metropolitan Hartford. For generations Rocky Hill has been a stronghold for the kind of family life that represents the best in America, without extremes either of wealth or poverty. The inhabitants desire to maintain the present character of the community and they are wisely determined to guide such changes as may be inevitable.

The town reports show fresh awareness and increasing interest by citizens in every aspect of town affairs. In 1941, a Board of Finance was established which has eliminated all deficit spending, while the town has enlarged its school plant, improved its fire-fighting equipment, added to the serviceability of its police department, and in 1946 installed a full-time building inspector. During the fiscal year ended June 30, 1948, the Town Plan Commission became the Town Planning and Zoning Commission. This is the latest demonstration of the community's determination to encourage desirable and permanent growth.

After consultation with the Connecticut Public Expenditures Council and the State Development Commission, citizens of Rocky Hill and members of the Planning Commission felt they wanted professional help in surveying the future situation of Rocky Hill relative to metropolitan Hartford. The question was how to get the most for the money. The Connecticut Public Expenditures Council brought in Homer Hoyt Associates (Chicago, New York, Boston) and John T. Blackwell of Boston, and proposed a self-help program. Members of the Planning Board have done important field work that otherwise would have had to be done by a professional working staff. They have made a land-use map, a map of existing zoning, and maps of water and sewer mains. The Municipal Consulting Service of the Public Expenditures Council helped prepare and circulate questionnaires, and have been assisting the town at every turn from the very beginning. The volunteer efforts of the Planning Board and other citizens interested in the future of Rocky Hill are the foundation for assured success in guiding the town's growth and development.

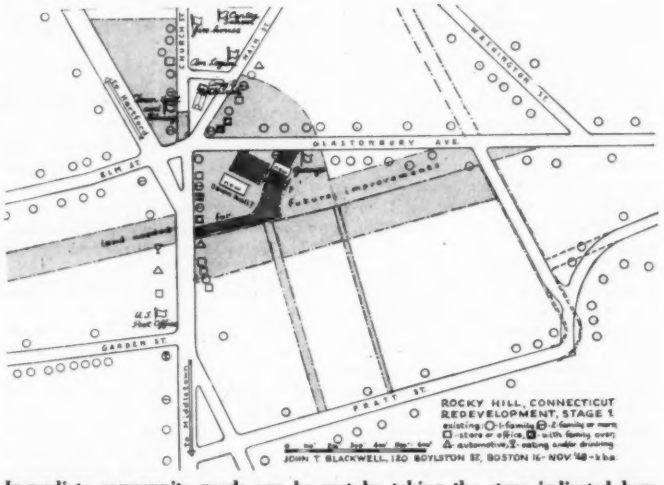
Planning in 1692 and Since

Planning as a process goes on all the time to some degree in every community, whether labeled "planning" or not. Rocky Hill, originally a part of Wethersfield, did its first planning in 1692 when Wethersfield voted to distribute land in the Rocky Hill area and appointed a committee to report a satisfactory way of handling this business.

The story of Rocky Hill, as told in the 1948 Annual Town Report, states that in 1722 the Rocky Hill district was set off from Wethersfield as a separate parish and incorporated a town in 1843. From that date until 1910 the Rocky Hill population fluctuated between 1,000 and 1,100. During the 105 years since incorporation, the residents of the town have been quietly busy at shipbuilding, farming, and manufacturing.

At the end of the eighteenth century 40% of the townsmen were engaged in seafaring, but manufacturing employment in Rocky Hill has since taken the place of employment in the Rocky Hill shipyards, sail lofts, rope walk, and on the ships themselves. The Hartford Rayon Company, Chemical Coatings Corporation, the Connecticut Foundry Company, a division of Allied Chemical and Dye Corporation, and two concrete products manufacturers are the present principal employers, together with some newer, smaller enterprises.

The increasing population growth of the City of Hartford, by reason of employment by manufacturing and insurance companies, is reflected in the resi-



Immediate community needs can be met by taking the steps indicated here within two to four years. Only two buildings would have to be removed to permit requisite paving for access to needed new town hall and new fire and

dential growth of Rocky Hill, of which the whole population in 1910 was 1,187; in 1920, 1,633; in 1930, 2,021; in 1940, 2,679; and in August 1948 was estimated by the Connecticut Department of Health at 3,200.

On May 15, 1948, the Rocky Hill Planning Board transmitted to its consultants the feeling of many citizens that reasonable amounts of new residential growth should be encouraged in such manner as will not immediately change the general character of the town; no land boom is anticipated or desired. Also, the town desired to accommodate desirable industries and such shopping facilities as needed by local residents.

It was pointed out that the increasing volume of motor traffic between Hartford and Middletown had outgrown the capacity of the existing roads. The probability that a new north-south regional expressway might soon be built through Rocky Hill led to an expression that the town did not wish to develop any outlying shopping center in competition with downtown Hartford.

Metropolitan Area Survey

Rocky Hill residents knew pretty well what they wanted, but they were also faced with the problem of accepting a share of metropolitan expansion that they do not seek. So the first problem put up to the professional consultant was to survey the trends of residential growth in the entire Hartford metropolitan area, to determine the number and income of families working in metropolitan Hartford who might seek homes in Rocky Hill, to survey the potentialities of Rocky Hill for new industries, and then interpret the probable consequences of such industrial and residential growth as Rocky Hill desires to permit in terms of future requirements for schools, shops, civic center, parks and playgrounds, with careful attention to traffic safety and ease of traffic flow.

At meetings in Rocky Hill in May, June, August, and September, the Planning Board and its consultants exchanged ideas and information. The distinctive feature of the planning procedure in Rocky Hill is that the self-help efforts of the Planning Board have not only reduced the immediate outlay, but have enlisted the continuing interest of members of the community who will think in terms of the town as a whole for the next several years. Every department of the town government has been invited to contribute to this effort, and all the citizens of the town, individually or in groups. A special feature of the later meetings has been the participation of representatives of the State Development Commission, the State Highway Planning Division, the Connecticut Public Expenditures Council, and the planning board chairman of an adjoining town.

It is becoming widely understood in Rocky Hill that planning is for people, for the whole of a town; that problems of agricultural, industrial, and residential land use, and of schools, parks, sewerage, water supply, fire protection, traffic congestion, and street construction go hand in hand; that solutions for one affect the possibility for solutions for the others, and that town planning does not mean any one group in town trying to tell others what to do but invites all to pool their ideas and abilities for the organized exercise of foresight and guidance to assure healthy and desirable growth and development of the town as a whole.

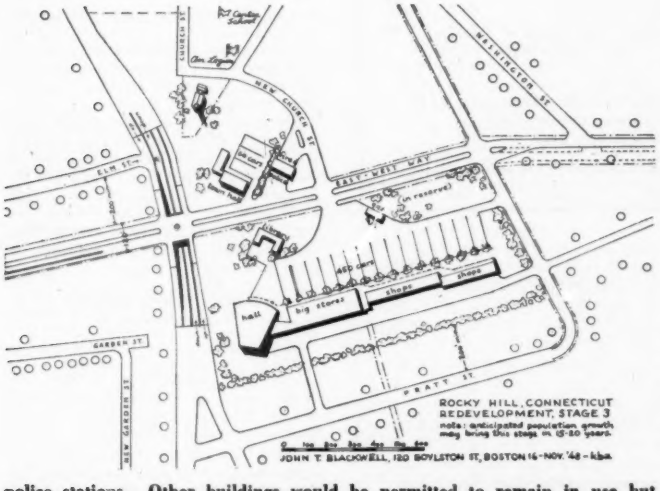
Redevelopment of Town Stage by Stage

A particular problem concerns the civic center of Rocky Hill since there is an immediate need for a new town building, a new library, improved quarters for the local court, the building inspector, the police department, and even the fire department. The consultants have suggested redevelopment of the existing town center, stage by stage, with the passage of the years, as increases in residential population may require. Their proposals, shown in the accompanying drawings, are devised for utmost economy by constructing each improvement as needed, and using it to the full both then and thereafter. Also their open design provides for flexible adaptation to currently unforeseeable future needs.

In the years to come, Rocky Hill will reap the benefit of its planning efforts primarily in community attractiveness, which can only be build as the town grows, not bought afterward. Simplicity of street plan will promote smoother traffic flow, lower accident hazard, lower cost of snow plowing and maintenance, and thus pay off in dollars every year. The increased attractiveness of the whole community enhances the desirability of individual homes. This pays off, too, through greater stability of the town's tax income from real estate, which in 1948 was 72.34% of the total municipal revenue of Rocky Hill.

The volunteer efforts of Rocky Hill citizens permitted the consultants to complete economic and population studies that Planning Board members might have found difficult to tackle for the first time, unaided; also, the consultants are contributing from their experience in other towns and drawing on accumulated knowledge of how best to achieve a town's desires.

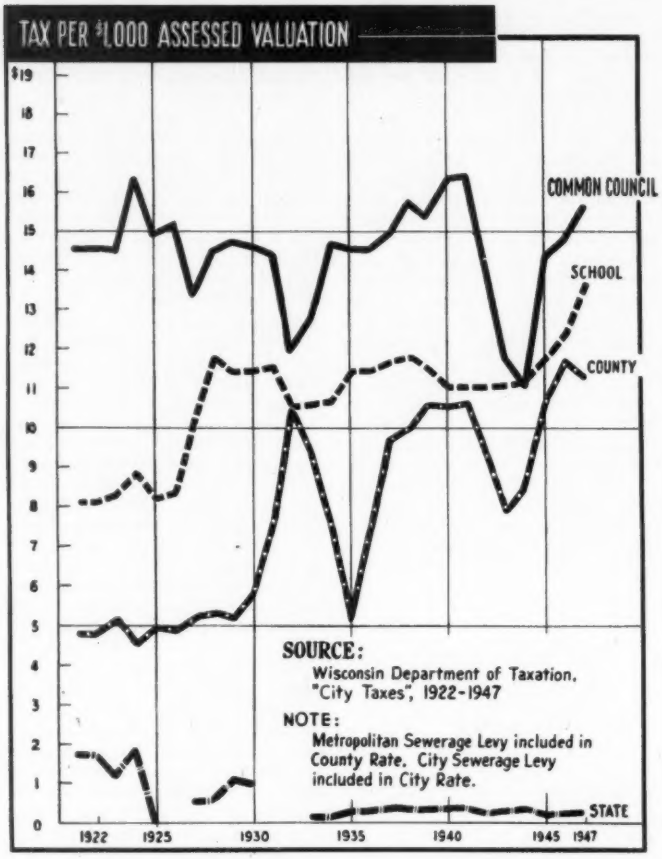
The citizens of Rocky Hill, newcomers and oldtimers alike, are proud of their tiny town—its early importance in Connecticut navigation; its library, the oldest in continuous operation in Connecticut; the fact that it has the oldest native brick house in the state. They may also be proud of being one of the first towns in Connecticut to establish an extended self-help planning program, drawing on the services of professionals in private and public agencies in a conscious effort to preserve the individuality of the town and to have it grow gracefully.



police stations. Other buildings would be permitted to remain in use but would not be further enlarged, improved, or extended. Their economic life would probably end with new shopping development culminating in Stage 3.

COMMISSION ON THE ECONOMIC STUDY OF MILWAUKEE PRESENTS

A Notable Report on a City's Finances



WILLIAM L. SLAYTON
Municipal Reference Librarian
Milwaukee, Wis.

WHEN Mayor Zeidler took office as Milwaukee's mayor last April, he felt that inflation was the major problem his administration would have to face. He wanted to know what its effect had been on Milwaukee, what Milwaukee could do locally to combat it, and what the city's financial program should be in the face of it. To solve the problem, he created a Commission on the Economic Study of Milwaukee, composed of five members—three city employees and two well-known civic-minded citizens.

The Commission soon realized that it would be unable to answer these major questions without a competent staff of researchers. Little money was available, but Harold M. Groves, Professor of Economics at the University of Wisconsin, took a keen interest in the project and agreed to supervise the studies as a civic contribution. He assigned four of his top graduate students to the task, and they spent the summer working literally night and day preparing the necessary material.

The result is the *Report of the Commission on the Economic Study of Milwaukee*, a document which has been hailed by public officials in Milwaukee as the most valuable document yet published by the city. The report's chief value lies in its comprehensive nature; many of the findings of the report had been known previously, but nowhere had they been assembled into one document and related one to the other.

Major Recommendations

The report consists of five major research sections in addition to two sets of recommendations, one by the research staff and the other by the Commission itself.

The first research section deals with Milwaukee's economic base, and reveals that Milwaukee is indeed a prosperous community and can well afford the services and improvements considered necessary by most citizens. The second section is a detailed analysis of the present revenue structure in Milwaukee with an exhaustive discussion of new sources of revenue. The third section deals with Milwaukee's expenditures, comparing three years—1926, 1940, and 1947. It is most revealing to find that deflated per capita expenditures for 1940 (in terms of the value of the 1926 dollar) were higher than for 1947. Governmental costs apparently rose at a less rapid rate than did the cost of living, in spite of the addition of several new services during this period.

The fourth research section of the report deals with Milwaukee's debt policy. The last section is a discussion of governmental simplification; although consolidated county government was recognized as the preferable solution, its political difficulty led the research staff to consider simplification through county operation of many of the city's functions.

Debt Policy, Lasting Improvements

The recommendations of the Commission are forthright and not hedged with saving clauses. As a result, many of them will be the subject of considerable controversy. A major recommendation is on Milwaukee's debt policy. As indicated by the excerpts quoted below, the Commission felt that—contrary to the position taken by Milwaukee's newspapers and several of its civic groups—the city should continue its pay-as-you-go policy. The recommendation,

however, does not apply to self-liquidating debt, public housing bonds, or to emergency short-term loans.

Another major recommendation of the Commission concerns the amount of money the city should set aside each year for permanent improvements. Milwaukee has a permanent improvement fund which, up to a few years ago, was added to at the annual rate of $3,800,000. Budgetary recommendations for 1949 upped this amount to nearly $8,000,000, but the Commission felt that it should be $10,000,000. To reinforce this recommendation, it cited the great backlog of needed improvements, as well as Milwaukee's prosperous condition, enabling it to support such an appropriation. The Commission suggested specific sources of revenue to meet the additional appropriation without the necessity of raising the present property-tax rate further.

On revenues, the Commission felt that the city should increase its liquor-license fees, adopt a sewer-service charge, and levy an admissions tax. The Common Council has already increased liquor-license fees, and the proposed admission tax is before the Council.

If still more money should be needed, the Commission suggested several other sources of revenue, such as the levy of a business occupancy tax.

The Commission also suggested needed changes in state legislation. One of the most important of these was the repeal of the state prohibition against municipalities' levying an income tax. The Commission felt that an income tax would aid Milwaukee in deriving revenue from those who live in the suburbs and that the city should be permitted to adopt it. Other suggested legislative changes were for a more equitable distribution of shared taxes such as the state income tax, the liquor tax, the utility tax, and motor-vehicle taxes.*

The report covers such a wide field and encompasses so much that it will continue to be a source of information and guidance for some time. It is expected to be of inestimable value to the city in charting its future financial course.

* See also the Commission's new proposal for levying special assessments (page 5 of this issue of THE AMERICAN CITY).

The Issue of City Borrowing

(Excerpts from the above-mentioned report)

THERE are two main justifications for city borrowing. One is that a particular capital expenditure may be so large and extraordinary that financing it with taxes currently levied would upset the stability of the budget. Similarly, it would introduce an inequity between current taxpayers who pay in full and future taxpayers who enjoy the services of the improvements but pay nothing.

The second justification is that borrowing may enable people to satisfy a need now which they might otherwise have to forego. The pressure of their current requirements may be such that they can legitimately elect to pay as they use rather than as they go.

The first of these justifications, at least, is not very valid for a city the size of Milwaukee. With a few exceptions, most specific projects are so small in relation to total taxes and the budget that an equal increment to capital can be made each year. It may be necessary for "Hickville" to borrow to pay for a new schoolhouse, but Milwaukee can take one new elementary school in stride as part of an annual budget.

The Case Against Borrowing

The arguments against borrowing are, first, that it adds to the cost of improvements. This is the same argument which in the case of individuals is used against installment buying. Data from Milwaukee's past experience indicate that interest can be an impressive addition to costs; frequently as much as a third of improvement outlay has been for interest. The argument is less impressive today when the city can borrow at from 2 to 3% interest. Nevertheless, additions to cost occasioned by interest are not negligible.

The second argument against borrowing is that it is extravagant. Here again the argument is the same as that applied to individuals. The easiest of all ways of paying for a purchase is to borrow. Psychologically the enjoyment of a purchase is better balanced against the pain of taxation if the time factor can be omitted. Certainly those who complain most against taxation ought not to be on the side of bonds ahead of taxes.

Moreover, there is the matter of inflation. It may be generally conceded that an ambitious improvement program is itself inflationary, and anything which makes such a program easier is also inflationary. But aside from this, it is usually more inflationary to borrow than to tax, even though the borrowing be from individuals rather than from banks. Certainly a city can best prepare itself for meeting a depression emergency if its full borrowing power remains unencumbered.

Where Borrowing Is Justified

Taking all of these considerations into account, there should be hesitancy to recommend a departure now from the conservative debt policy that has become a tradition in Milwaukee. This decision does not apply to the expansion of debt for public housing. The housing program, in addition to being partially self-liquidating, is one that cannot be postponed without irreparable loss. Nor should it apply to self-liquidating debt issued to acquire existing utilities. It would be unwise for the city to make a fetish of keeping out of debt. Each proposal to issue bonds has to be judged on its own merits. But in general the city's resolution to become and to stay debt-free was a laudable one and should be encouraged and praised, particularly in times like 1929 and 1949, when optimism is likely to run rampant.

It is a long-recognized rule of good fiscal policy that a city should not issue bonds that provide terms of payment over a longer period than the life of the improvement, but there is little if any objection to shortening this period to less than the life of the improvement. Conservative finance looks in the direction of the austere policy here recommended—the financing of public improvements by current taxation.

* Published November 1948. 237 pages. $2.50. Available from Municipal Reference Library, City Hall, Milwaukee, Wis.

Two Million Gardens—Goal for 1949

ESTIMATING at 18,000,000 the number of home and community vegetable gardens planted in 1948, the National Garden Institute has set 20,000,000 gardens as its goal for 1949. The Institute expresses the hope that a similar goal will be set by the U. S. Department of Agriculture, and that it can be agreed upon by the garden clubs and other organizations.

Community improvement is another prime objective of the Institute. This includes everything from the beautification of school and church grounds to the planting of parks, playgrounds, living war memorials, and the restoration of blighted areas.

Still another of the Institute's current activities is a national rural-school-grounds beautification contest, which has aroused much interest and enlisted support from educators, garden clubs, extension workers.

Municipal officials and local civic leaders can obtain information regarding these and other activities of the National Garden Institute by writing to its offices in New York, Detroit, Chicago, or San Francisco.

Recreation Director Wanted

THE City of Lodi, Calif., invites applications for position of City Recreation Director. Minimum requirements include teaching credentials and administrative experience in well-rounded recreation program. Write to H. D. Weller, City Manager, for applications.

Yonkers Can Have More Parks

City has a unique opportunity to reserve for public use some of the 6,000 parcels of land to be acquired through "in rem" mass foreclosure proceedings. A valuable study of this subject has recently been completed by the Planning Board of Yonkers, at the request of the City Manager. Here is the background on why and how the study's recommendations were made.

YONKERS is a fairly large city in area, covering 20 square miles, and having a population of over 155,000. The public lands set aside for recreation at the present time, including two county-owned areas, total 380 acres, or about 2.5 acres per 1,000 population. This figure is only one-quarter of the standard of 10 acres of park and recreational areas per 1,000 in population suggested by the National Recreation Association and other well-recognized authorities.

In the early part of 1948, it became apparent that the city was to acquire title to some 6,000 parcels of real estate. It already owned 500-odd parcels of land acquired through foreclosure in the past. The huge new legacy of real property resulted from the action by the Common Council of adopting the method of foreclosing on tax-delinquent properties, known as "an action *in rem*," which is authorized by the Tax Law of New York State.

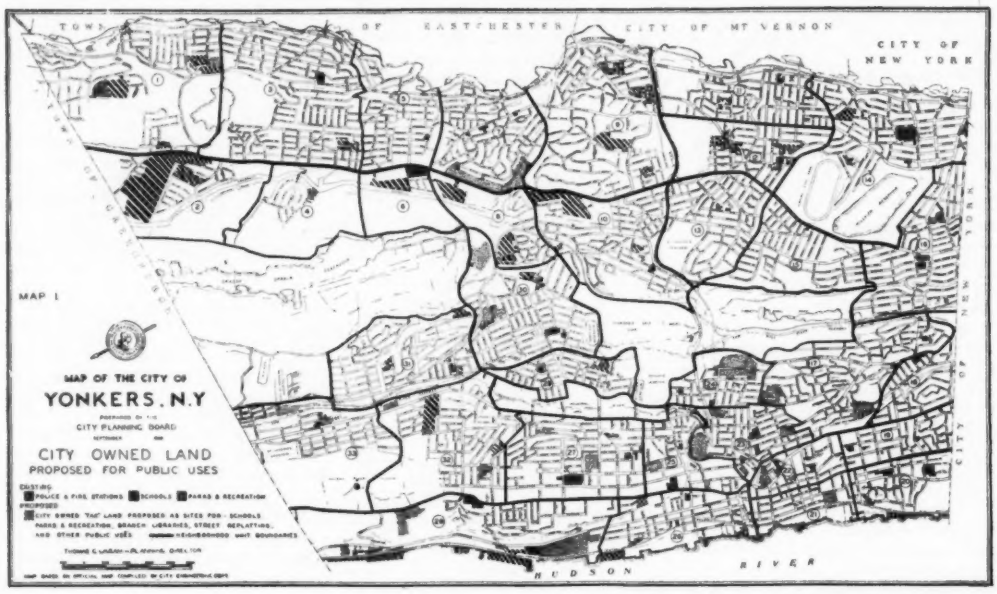
This action is in reality a mass-foreclosure proceeding, affecting all parcels of real property in the city on which taxes, assessments, and other legal charges have been due and unpaid for a period of four years or longer.

Master Plan Not Available

No up-to-date master plan was available to the Planning Board as a guide for determining what lands should be set aside for recreation areas and other public uses, although basic studies for master-plan revision are under way, under the direction of J. Thomas C. Waram, Planning Director. Yet immediate and convincing recommendations were needed, as Yonkers is badly in need of additional revenues, and it was planned to sell off as much of the newly acquired property as possible in order to place it once more on the tax rolls.

After analysis, it was decided that certain basic studies were essential, such as a study of recreation needs on a neighborhood basis, a population study to determine the ultimate population to be served in each neighborhood, and the needs of the different age-groups, as well as a study of the schools system, since the school recreation program necessarily must be planned in conjunction with other recreation facilities.

The first step was to obtain a true picture of the relationship of the many scattered parcels of land to existing facilities. For this purpose, a complete listing of the parcels by assessors' block and lot numbers was obtained. Sectional maps of the city at a scale of



1 inch to 200 feet were prepared, showing all property lines and lot and block numbers.

All existing facilities were shown on these maps by colors; in addition, the *in rem* lots and the "tax lien" lots were shown in separate colors. The maps were then pieced together to form a complete map of the city, measuring 16 by 9 feet. This map, affixed to a wall, proved of tremendous value in the course of the study.

Criteria for establishing neighborhood boundaries were then set up, which resulted in the final division of the city into 33 neighborhood units.

Future Population Estimated

Prognostications as to Yonkers' total population on a long-range basis, as of 1980, were also made, and a final figure of 190,000 was determined. The probable distribution of this future population was mapped. In order to do this, it was necessary to analyze vacant properties. Future population was allocated to the vacant parcels where it appeared that development would be most likely to occur because of certain favorable factors. These were:

- A location in or close to areas served with adequate utilities
- Accessibility to transportation routes and community facilities
- Suitability for economical site improvement without encountering major topographical difficulties.

The existing or probable future zoning of the various parcels was, of course, a major factor in determining the density of future population distribution.

A study of school sites and school population was also made, with the cooperation of the Board of Education.

With the basic facts assembled, standards were established for the various types of recreation areas needed to build a well-integrated recreation system. These types included playlots, playgrounds, playfields, neighborhood parks, large parks, and other miscellaneous types of recreation areas.

Then a study was made of the land available for retention in each neighborhood. Properties were selected, mapped, and checked in the field before any properties were finally selected for recommended retention for public use.

240 Acres Found Desirable

The completed study revealed that some 240 acres of land could be added to existing recreational facilities from tax-foreclosed lands, or about two-thirds of the land now available for recreational use. Among the new areas proposed are a large city park of about 70 acres in size; seven neighborhood parks ranging in size from 4 to 13 acres; sixteen playgrounds of from 1 to 4 acres in size; three playfields averaging about 10 acres in size; ten playlots of smaller size; and about 20 acres of additions to existing parks.

As was to be expected, the study revealed very little tax-delinquent property in the most densely populated sections of the city, where there is the greatest need for additional recreation areas. Most of these areas are blighted and ripe for redevelopment. It was recommended that *all* available land in these sections be retained. The study also revealed the presence of large waterfront properties in the northern section of the city, all of which were recommended for retention for future recreational purposes.

The final recommendations included land for other public uses such as future libraries, police and fire stations, and lots bordering on streets that will some day require widening. In addition, the Westchester County Department of Planning made a study to determine what properties could be used for future throughways, parkways, and expressways. Still other properties are to be reserved for utility easements.

The recommendations of the Planning Board can be effectuated through Council action by designating the properties on the official map of the city as parks.

This article is based on a talk by Frederick W. Maxwell, Member of the City Planning Commission of Yonkers, N. Y., delivered at the Third Regional Plan Conference in New York City, November 16, 1948.

Has Your City a Bicycle Ordinance?

With a bicycle ordinance, expect fewer of these tragic accidents.

To the Editor of THE AMERICAN CITY:

Last year over 25,000 boys and girls were killed or seriously injured in bicycle accidents. In three out of four of these casualties, the child was violating a traffic law at the time of the accident.

An effective bicycle-safety program can be summed up in three phases—child safety education, bicycle registration and licensing, and bicycle regulation. Any bicycle-safety program must consider the adoption and enforcement of bicycle legislation if it is to be successful.

Bicycle ordinances are designed to compel the cyclist to maintain his vehicle in good mechanical condition and observe the traffic laws. Some of the measures to be considered for inclusion in any bicycle ordinance are: (1) registration and licensing of bicycles by municipalities, (2) police authority to impound bicycles and to suspend and revoke licenses, (3) police specification of those streets where the bicyclist is permitted to ride on the sidewalks, (4) police regulation of the conduct of bicycles in traffic, and (5) special bicycle courts, conducted under the friendly and understanding direction of the police department. Item No. 5 is a point which is receiving considerably more attention daily and which is being stressed by the Bicycle Institute of America, the manufacturers' association.

The Model Bicycle Ordinance offered by the National Safety Council is recommended by the undersigned, and copies may be obtained from the writer. Also available is literature describing the bicycle-safety program put on this year by the City of Peoria.

ROBERT A. CAMPBELL

The writer is executive vice-president of the Safety Cycle Club of America, 226 S. Madison St., Peoria, Ill., and a member of the Public Safety Education Committee of the National Safety Council.

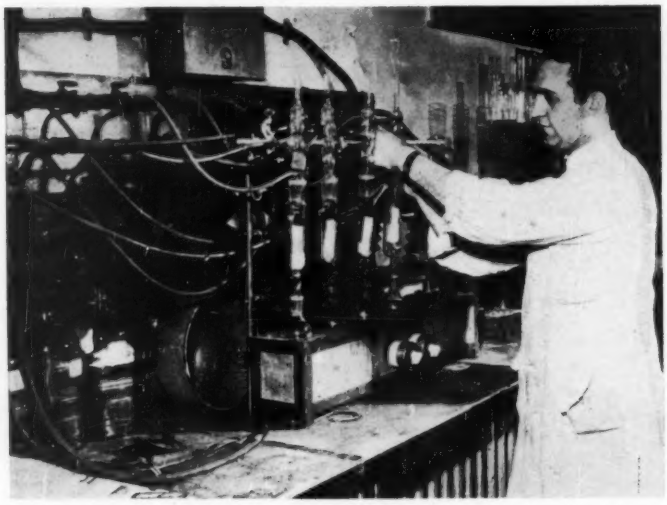
Allegheny County, Pa.,

An analysis of the service features to tary authority that led to an equitable

By ELLIS E. BANKSON
Managing Engineer
Allegheny County Sanitary Authority

MANY interesting problems arise when communities in a metropolitan area such as ours endeavor to relieve stream pollution collectively. Many spring from the technical phase of the work. But basically the entire program succeeds or fails only if the financial structure is sound.

The financial need is, first, the favorable sale of sufficient bonds to meet all capital costs; and, second, a schedule of rates or charges for sewerage service that will produce enough revenue to cover the entire annual burden of debt service, operating costs, and administration expenses. The question of rate structure is one of equity between the several classes of customers.



Laboratory analyses of domestic sewage and industrial waste played an important part in the calculations for the estimating of sewer service charges.

Revenue Bonds Required

The revenue bond is the only type which can be sold by a municipal authority in Pennsylvania. This permits the pledge of only the revenues from such service and does not permit a pledge of the utility property, in the form of a mortgage. Thus, it is the revenue of the authority that constitutes the vital link with its investors.

In the case of a local municipal authority supplying water service, the shutoff privilege helps guarantee full revenue collection. A separate sewerage authority, however, is accorded the legal protection of only the property lien as a final aid. I understand that the property lien is completely effective only at time of sale or transfer of the property in question and thus is not of great value.

In the service area of the Allegheny County Sanitary Authority, we find a range of water rates all the way from $1.25 per thousand gallons or more, to a rate of 20 cents per thousand gallons within the City of Pittsburgh. We also find about one-third of the City of Pittsburgh and a few other communities receiving water service on a flat-rate basis. The corresponding low block charge of these several meter-rate schedules will also range from a high of some 40 cents per thousand gallons to a possible low of 10 cents per thousand gallons. This condition would mean that there can be no general relationship between the water rates of the community and the sewerage rates of this Authority, unless we would violate the requirement of the Municipality Authority Act that the rates be reasonable and uniform.

For a concrete picture, let us assume for simplicity that the first cost of a construction project would approximate $80,000,000, and that the debt service will approach 4½% per year from a 3% interest rate and a 40-year bond maturity. This would mean an annual burden of about $5,000,000 from a debt service of some $3,650,000 and an annual operating cost of $1,350,000.

Our financial problem is therefore divided into the two phases — of an $80,000,000 bond issue and a uniform schedule of sewerage charges which will produce about $5,000,000 per year, from something over 100 municipalities, of which nearly 60% will apply within the City of Pittsburgh (population 669,817, 1940 census). On the other hand, the Allegheny County Sanitary Authority is without jurisdiction within the area of each municipality and is free of any responsibility to the Sanitary Water Board of the State with regards to pollution abatement, excepting as may be delegated to the said Sanitary Authority by each municipality.

Adequate Security Needed

Likewise, the Sanitary Authority is not empowered to collect rentals or charges for sewerage service from or within each municipality excepting as may be delegated by the municipality, through a formal agreement, for the period of any proposed bond issue, and of a character to provide adequate protection for the investor of those bonds. After the construction is completed and the sewage-treatment operation has been established, the Authority could then enjoy, in its own right, the resulting revenues from sewerage charges for service rendered, but the point here is that adequate security must be applicable for the initial bond issue at the date in advance of initial sewerage service.

The question of an equitable schedule for rates and charges against any sewerage service which may be rendered to any single customer or community is simply that of a uniform al-

Sets Sewer-Service Charges

be provided by this new giant sani- recommendation for service charges

location from the aforesaid $5,000,000 among the various customers.

Since some 80% of the water service in Allegheny County is through customer meter, it would therefore follow that a sewerage charge based on metered water would be fair and serviceable. For the remaining flat-rate service of not over 20%, the Authority engineers have made a careful estimate of the probable sewage quantity that would result by meter measure, for the purpose of cost allocation and rate structure. However, a schedule of flat-rate charges is proposed by the Authority. This should prevail until all public water service may be converted to a metered basis.

Since we are confronted with some 50 different types of water-rate schedules, it is evidently impractical to consider a schedule at a percentage of each water rate. The result would be 50 different types of sewerage-charge schedules, instead of the legal requirement for reasonable and uniform rates. Therefore, we have, as an alternative, a schedule on a quantity basis.

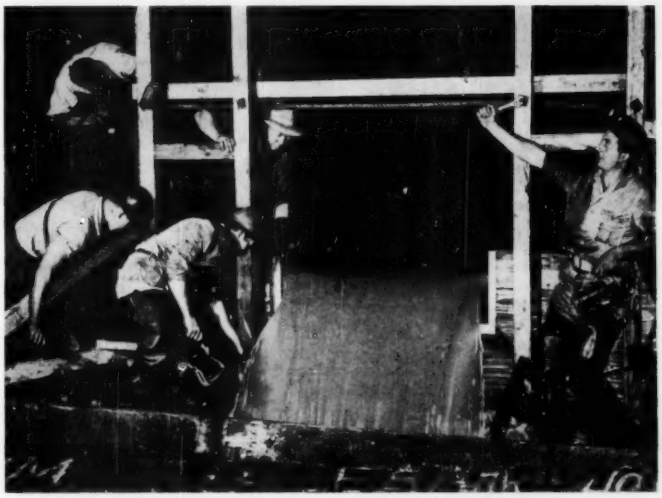
Sewage Types Analyzed

All water-service data were collected from current records. Careful study was then made of the quantity employed for cooling purposes and for such other uses that would allow delivery into the river directly without need for sewage treatment. These latter quantities were then deducted from the total of water-meter readings and the remainder employed as our quantity base for rate-making purposes.

Thus we arrive at a total, before the inclusion of ground water infiltration. This total may be then divided into the $5,000,000 of revenue requirements to provide a rate. However, it should be noted that the fair cost of sewerage service will not apply in direct proportion to the gallons or quantity of sewage discharge from the properties of each individual customer. It is at this point that we encounter the question of a proper and equitable form for a rate structure.

Incidentally, a local engineer recently made a claim that the unit cost of sewage collection and treatment would be at the same rate per thousand gallons for all classes of customers. Our analysis, however, does not bear out his claim. We feel that a fair cost allocation for groundwater infiltration and storm-water flow should be proportioned by sewer per customer instead of the sewage discharge from each property or each customer.

Let us start out with a revenue-bearing sewage of 36,500,000 gallons for the full year of 1954 and a corresponding annual burden of $5,000,000. Then, let us deduct the special items of revenue or cost that do not apply in proportion to the quantity of sewage that originates on the property of each customer.



Careful measurements were made at accurately constructed weirs in the system.

Double the Domestic Sewage

By the detail computations of customer sewage, groundwater infiltration, and stormwater flow, or stormwater capacity, we find a fair estimate for plant influent, or plant effluent, at 73,000,000,000 gallons per year, as just double the amount of domestic sewage. After deduction of special revenues and special costs, we find a remainder of quantity burden at $4,160,000 per year. Dividing the 73,000,000,000 gallons into this last total of quantity output charge produces a figure of nearly 5.7 cents as a fair average quantity cost per thousand gallons of actual plant effluent, including both the groundwater infiltration and the stormwater capacity. This unit cost must now be carried back into the rate structure for application against the so-called revenue sewage that originates on the property of each customer.

By separate analysis we find an average sewer length of over 30 feet per house and an average infiltration of about 3.8 gallons per day per foot of sewer, or near 115 gallons per day of groundwater infiltration for such a representative four-person household of the sewerage service area. The detail analysis for stormwater allocation produces a result that is somewhat higher than for groundwater infiltration. It is our conclusion that a fair cost allocation for this item against an example of the normal household should be at least equal to that for groundwater infiltration, or at the rate of 115 gpd.

By separate analysis we find the total of domestic sewage at about 16,500,000 gallons during the year 1954, or 45 million gpd for a population near 1,-

500,000, and about 120 gallons per day per average residence of four persons.

Thus we have a cost allocation for infiltration and stormwater of 230 gpd per house, in conjunction with 120 gpd of domestic sewage. This total of 350 gpd at the rate of 5.7 cents per thousand gallons would show a total of quantity cost at less than 2 cents per day, or at the rate of 16.6 cents per thousand gallons if applied to only the customer sewage of 120 gpd (the 350 gpd figure applies only for this item of cost allocation and not for design purposes).

The cost allocation for normal sewage quality or concentration has been computed by our engineers at $690,000 per year for 36,500,000 gallons of customer sewage, or at less than 1.9 cents per thousand gallons. The sum of this 1.9 cents for quality and the 16.6 cents for quantity gives us about 18.5 cents per thousand gallons for the collection and treatment of domestic sewage.

Commercial Cost Allocations

For a similar example of cost allocation in the case of a large commercial or industrial customer, we find the recent annual water sales for nine downtown office buildings at about 326,500,000 gallons per year and only 5,220 lineal feet of sewer in the street adjacent to those buildings.

If we would now assume the groundwater infiltration for this length of sewer to be properly allocated equally for both sides of the street at the rate of 3.8 gpd per foot of sewer, we would then find the total of ground water infiltration for allocation against these nine office buildings at 9,918 gpd or about 3,600,000 gallons per year, or only slightly over 1% as much as the water sales.

The addition of this quantity for infiltration and an equivalent burden from stormwater capacity would therefore produce a total flow per year for these nine office buildings at about 333,700,000 gallons. A total cost of this effluent quantity at 5.7 cents per thousand gallons and the quality cost of 1.9 cents of customer sewage would produce an annual cost of $25,224.40. This last figure divided by the actual water sales of 326,500,000 gallons would produce the indication of a fair cost allocation at 7.7 cents per thousand gallons of revenue sewage.

Rate Basis Is Formed

These two examples of 18.5 cents per thousand gallons of sewage from a normal residence and 7.7 cents per thousand gallons from selected examples of office buildings will be noted as in reasonable agreement with the proposed range of a sliding rate schedule from 18 to 7 cents per thousand gallons of sewage originating on the property of the customer, before inclusion of any surcharge for concentration of sewage, above or beyond the average concentration.

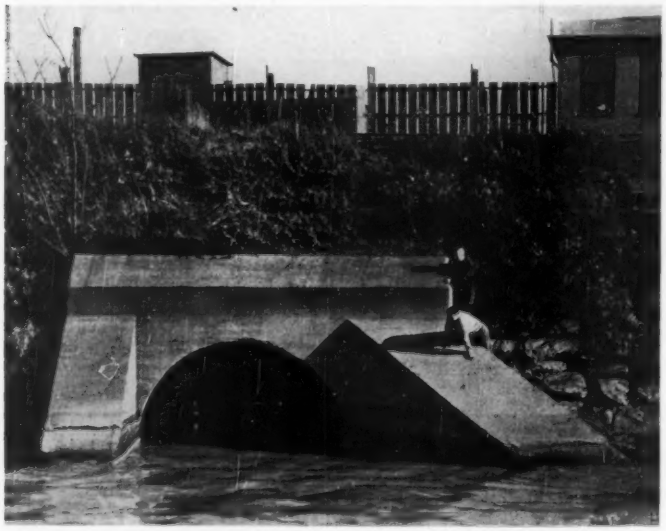
The foregoing description has been submitted only by way of illustration, although the resulting allocations are very similar to the unit costs indicated by the very careful cost analysis prepared by our engineering department and summarized here for the purpose of more careful inspection. The theory of this comprehensive cost allocation is founded on principles akin to the foregoing illustrations, excepting that it is intended to be all-inclusive, and it is divided into three classes — domestic, commercial, and industrial customers, with the final results of an average cost allocation to each group at the three representative rates of 18, 10, and 8 cents per thousand gallons of sewage originating upon the property of each customer. Since these last three figures are averages it would follow that some of the individual charges could range somewhat higher than the first rate and somewhat lower than the last rate. The proposed schedule of rates and charges does make allowance for a range of rates of from 7 cents per thousand gallons at the bottom to 18 cents at the top plus a minor influence from the proposal for a minimum billing charge per customer.

Industrial-Waste Surcharge

A surcharge was recommended by the published report to apply to industrial wastes wherever the solids content or the organic matter is higher than that of the composite sewage at the treatment-plant influent.

The proposed formula would simply raise the normal sewer-rental charge by a flat percentage to be computed for each industry or factory, from the results of laboratory analysis in parts per million. In order that a single formula would include some accounting for both solids content and organic matter, an arbitrary allocation was adopted at 75% for solids content and 25% for organic matter as measured by BOD. We offer no apology for the arbitrary feature except that it does seem to produce a series of results for the various conditions that are fairly consistent among themselves.

Study has also been made of a different formula that is free of any arbitrary selection and would incorporate a part of the actual cost figures from plant operations of the preceding year. We may yet consider the merit of its final adoption.



Officials are inspecting the 32nd Street outfall to the Allegheny River. The plant proposed by the Sanitary Authority will stop pollution at this plant.

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New Police Methods *with Children*

By JOHN R. ELLINGSTON
Special Adviser on Criminal Justice for Youth
American Law Institute

TO THE child the policeman is "the law" and as such does far more to shape the character and conduct of future citizens than any judge. The patrolman can sow hatred and fear of the police and of the law in all children of a neighborhood, or he can inspire them with confidence in the police as protector and friend. His attitude may insure that the first offense by a juvenile shall be his last, or it may push the chance delinquent towards a criminal career.

Between the police officer and the children of the dominant group in any community stands, as we have seen, the prestige and influence of the parents. But no such barrier weakens his power for good or ill over the children of those without money or position who crowd the blighted areas and slums of our cities. In these areas, congestion blocks the streets and sidewalks. Consequently, the law has to forbid children to play stick ball in the streets, to skate or push a scooter or ride a bicycle on the sidewalk, or even to make excessive noise — all perfectly normal and healthy activities of children in more leisurely and prosperous residential neighborhoods. On the policeman falls the duty of adjusting these prohibitions to the urgent needs of children for activity and noise. Letter-of-the-law enforcement and brow-beating do no more than drive the children into defiance and convince them that the law is against them.

PROGRESSIVE police departments have begun to learn that the protection of the true interests of society lies in the protection of the child and in the satisfaction of his legitimate needs. Instead of harrying under-privileged children, such police departments seek, by setting aside some streets for play, by establishing Police Athletic Leagues and Boys' Clubs, and by similar measures to provide the outlet for juvenile energies that the community's indifference denies. Makeshift solutions to an impossible situation as some of these measures are, they stamp the policeman as the friend of children and mark a substantial advance from the benighted era in which parents frightened youngsters into obedience by threatening to "call a policeman."

Police and sheriffs have, of course, to deal with many children and adolescents guilty of far more serious offenses than riding a bicycle on the sidewalk, or street-car hopping, or trespassing. In many California municipalities from one-third to one-half of all those arrested for felonies during the war years were under 18. Their crimes included all those in the penal code, though offenses against property made up the majority. These youths put a police department to perhaps its severest test. Some of them are tough, and, when armed, much more irresponsible and dangerous than older men, and they have to be treated accordingly. Panic and resentment tend to make an arrested adolescent impertinent, or sullen, or violent. Such reactions try the tempers of the best men. On the other hand, many youths arrested are eventually found not guilty, many more are first offenders, and many of the hardened or habitual young offenders can be salvaged. The sooner, therefore, that police learn to balance the strong arm with understanding, to give adolescents a square deal instead of threatening them, clubbing them, and branding them as "bums, liars, and punks," the fewer habitual criminals they will help to make.

WHAT the police officer needs to work successfully with juveniles is what the good teacher needs, the good social worker needs, and what we all need, better understanding of human behavior.

An incident which took place in a small city in Minnesota suggests that understanding requires considerable emotional maturity in police officers, as in the rest of us, but that it pays off in better protection of the public. A youth of seventeen, driving a car at reckless speed and on the wrong side of the street, hit another car broadside so hard as to hurt seriously the priest at the wheel. Adding to the gravity of the offense, the youth was driving without license, having lost it because of previous recklessness. Quite understandably the policeman who had taken the bleeding victim to the hospital and arrested the offender appeared at the court hearing anxious to see "this bad egg get what's coming to him."

Himself an apostle of understanding, the judge in this community has built up extensive diagnostic services—social, medical, and psychiatric. Consequently he had a good deal of information on the culprit by the time of the hearing. The youth, not too clean, gangling and awkward in clothes that his arms and legs had outgrown, was arraigned.

"Have you any friends here who are interested in you?" the judge asked him.

"No."

"Isn't your mother in the courtroom?"

"Yes, but she don't know what it's all about. She's deaf."

"Where's your father?" inquired the court.

"Out West somewheres, working in a war plant."

"Well, isn't there someone here from your church or your school to help you?"

This surprised the youth. "Why should they be?" he asked sullenly. "They don't like me."

Gradually the examination built up the picture of a boy who had practically brought himself up. A failure in school, he was considered not bright and edged off to the fringe of the class. Yet intelligence tests showed him to be of normal mentality. Medical examination revealed both poor vision and some deafness. It appeared that he had failed in school because his seat was too far

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from the teacher for him to hear what was being said and too far from the blackboard for him to see properly.

The arresting officer followed the developing story closely. Presently he asked for a word with the judge in the latter's chambers.

"Your honor," he said, "I'd like to take a crack at that kid."

"What do you mean?" hastily inquired the judge.

"Why, the kid's never had a chance and it looks like everybody's ganged up on him. I don't know anything about this big brother stuff, but I'd like to try giving that kid a little friendship and show him somebody's interested in him. I'd help him to get some decent clothes and go to see him at his home without my uniform and maybe take him fishing. And I think he ought to have a job. School isn't doing him any good."

So instead of sentencing the youth to the state reformatory, the judge placed him on probation to the police officer. Five years later I heard the story and its altogether satisfactory outcome from the judge and the police officer concerned.

THE NATIONALLY known chiefs of police and sheriffs who, in 1944, wrote *Techniques of Law Enforcement in the Treatment of Juveniles*, declare it imperative that every police officer be trained to handle and interview children and youths. To provide at once the specially trained personnel necessary to handle juveniles taken into custody and necessary to co-operate with other agencies in preventing delinquency, they recommend the setting up, in every police department and sheriff's office, of a juvenile bureau (also called variously delinquency bureau, crime-prevention bureau, youth guidance bureau, or special services division).

The juvenile bureau is not a new idea. It dates back to about 1913, when the Police Department of Portland, Ore., established the first juvenile bureau in America. In 1922, the International Association of Chiefs of Police accepted crime prevention as one of the five major functions of a police agency, and recognized the need for women in an effective prevention program. The Association declared policewomen to be essential to a modern police department. However, the process of filtering the larger understanding down to local law-enforcement agencies has taken time. In 1944, California's Department of Justice estimated that less than 25% of the State's law-enforcement agencies were employing specialized units or techniques to deal with delinquents and delinquency. Accordingly, the California Youth Authority's survey staff makes a major effort to encourage the establishment of juvenile bureaus both in municipal police departments and in offices of county sheriffs. In this task, the Authority works closely with the State Department of Justice, which in 1944 issued a manual to all police and sheriffs on how to organize a juvenile bureau. By 1947, twenty such bureaus had been set up as a result of the Authority's surveys.

A juvenile bureau has three major functions:

1. To handle all young offenders taken into custody by the police in the manner best calculated to put an end to further misconduct.

2. To discover delinquents, potential delinquents, and conditions tending to create delinquency.

3. To serve as liaison between the police department and all other agencies in the community working to control delinquency.

The bureau does not replace patrolmen and other members of the department in handling children; it supplements them. If a patrolman takes any juvenile into custody, he delivers him or her with the arrest report to the office of the juvenile bureau, which thereupon takes over. This eliminates the generally harmful procedure of questioning juveniles at the police station.

The juvenile bureau officer combines the duties of the police investigator, seeking to clear the crime, with those of the social worker, seeking to help the child to a satisfactory adjustment. To win the confidence of a child and of his parents, he or she needs training in psychology and skill in the art of human relations. He must break with the traditional approach of the policeman and look, not solely at the seriousness of the offense, but at the needs of the child as these emerge from the interview, the investigation of the home, the check with the school, and from other sources of information. He may enlist the aid of a child-guidance clinic. For girls involved in sexual difficulties, the policewoman will certainly want to provide a medical examination.

IN SHORT, the juvenile bureau must get all the facts available if it is to make dispositions in the best interests of the community and of the child. Dispositions? Some may wonder whether that is not a judicial function. They forget that every policeman is "a court of first instance," as a former Commissioner of Police in New York City phrased it. They forget also that delinquency is an incident of growth. Every child breaks some law, but his parents or teachers do not thereupon report him to the police. As organized society learns to discharge its much-increased responsibility for children's behavior, it tends increasingly to leave to family and school and welfare agencies the handling of every delinquency that these institutions can dispose of successfully. The same psychological and social considerations dictate the granting of discretion to the police juvenile bureau to choose adjustment programs. This is the procedure usually preferred by juvenile courts in California. Any other procedure means swamping the court calendar with children who do not need its attention, and giving less time and care to those who do.

WHAT the juvenile bureau can do with children after investigation depends to some extent on the resources and co-operation of the community. The bureau's first recourse is to the parents. Too often fathers and mothers do not know that their children are slipping into delinquency or do not appreciate the dangers or seriousness of a pattern of behavior until the police officer tells them. A tactful officer can often arouse parents to their responsibility and safely leave to them the handling of their children. However, when the parents prove uncooperative, or unfit, or simply unable to handle a difficult situation, or if the child reveals serious personality difficulties and maladjustment to his environment, the competent juvenile officer will refer the case either to a child-guidance clinic, if one exists, or to the probation department and the juvenile court.

The California Youth Authority's specialist on police work with juveniles meets constantly the question how far the police should go in treatment. Prevailing opinion of leaders in the field appears to be that it should not go farther than *to see that something constructive happens*. In other words, the police should not themselves organize junior police units or operate boys' clubs, athletic leagues, or summer camps. Instead they should encourage and aid group-work agencies to set up the necessary facilities to which the police can refer boys needing such opportunities.

Again, social case work does not fall in the proper sphere of the juvenile bureau; the police should transfer a child needing it to a family- or child-welfare agency. However, on occasion an officer may carry a youngster on informal probation for a period. For instance, a policewoman may in this way provide counseling and encouragement to a friendless girl, or an officer may stiffen the back of a wavering boy. Voluntary probation may give the officer an alternative on a doubtful case to the more serious procedure of filing a petition with the juvenile court. However, voluntary probation should never be undertaken unless the officer has the temperament and the time to give effective guidance to a boy or girl, or without

the whole-hearted co-operation of both child and parents.

In violation of traffic ordinances by children, the machine age presents law enforcement with one type of offense for which the most satisfactory disposal still remains to be found. Some California counties handle all minor traffic violations by juveniles in local justice courts. In other counties, the police or the justice courts certify all juvenile violators to the juvenile court. That is costly, time-consuming, and usually futile, as the juvenile court dismisses most cases at the first hearing. The Youth Authority believes all these offenses should be referred to the juvenile bureau. The bureau could dispose informally of minor violations and determine whether, as often happens, the traffic violation involves other delinquencies or forebodes more serious types of delinquency. It would, of course, take up more serious cases with the probation department and juvenile court. In one large county that lacked well-developed police services for juveniles, the Authority recommended the assignment of one probation officer as a traveling referee of the juvenile court for traffic matters.

FAILURE to detect delinquent behavior at the earliest possible moment is a disservice to the child, for the delinquency that goes undiscovered may be repeated and grow into a habit; the unsupervised girl may drift into prostitution and the seller of stolen junk may graduate to burglary. In the extensive subdivision of labor necessary for the control of crime in our complex society, the duty of discovering delinquency and of conditions that foster it falls logically to the police. Like the successful handling of children, it is a job for specialists.

The juvenile bureau comes in contact with delinquents, first, by referral from the patrol force and other members of the police department and from schools, welfare agencies, recreation directors, parents, and public; secondly, by looking for delinquents in places they are likely to be found. The bureau uncovers conditions that create or encourage delinquency by information from others, by patrol, and by analysis of the statistics on delinquency compiled by the central juvenile index. The police department in one California community reports that members of the force discover only one-fourth of all the delinquents it handles while the remaining three-fourths come to its attention through other sources. Such a degree of co-operation bespeaks greater community confidence in the police than they have enjoyed in the past. A juvenile bureau of specialists can help greatly to win public confidence and co-operation, particularly if it includes policewomen with some training in social work. School officials, for example, who would hesitate to refer juvenile offenders to a patrolman, will welcome the aid of the qualified staff of a juvenile bureau.

HOWEVER, a major purpose of a juvenile bureau is to uncover delinquency that might not otherwise come to light. The special patrol constitutes the tool. Men and women officers of the bureau keep a close watch on bus, train, and ferry terminals for runaway boys and girls, and on hotels and rooming houses for unattended or loitering juveniles. They patrol parks and amusement centers preferably in pairs and in the afternoon and evenings. They maintain constant supervision, both routine and under-cover, of public dance halls to see that under-age boys and girls are not patronizing them and that they do not become procurement centers. They check on bars and night spots to see that minors are neither being served liquor nor employed in the establishment. Periodically, they check on the employment permits of girls in cheaper-type restaurants, for as the Federal Security Agency Manual, referred to above, reports: "The case histories of many young girls still in their teens, who have turned to prostitution or promiscuity, indicate employment in restaurants at an age which constituted a violation on the part of their employers."

Since delinquency is frequently associated with street trades, the juvenile patrol keeps a sharp eye out for children selling flowers or pencils, or singing and dancing for money, or panhandling, especially at night. The patrol checks on bowling alleys and pool rooms to see that pin boys and rack boys are not working during school hours and on movie houses to see that children do not attend during school children from sitting in the balcony and not employed as ushers. Too many movie houses serve boys and girls as places of assignation. Lax management, coupled with the erotic stimulation of many pictures, encourages sexual delinquency. It is up to the police to persuade managers to prevent unattended children from sitting in the balcony and to protect them from perverts and sex criminals as well as to maintain standards of decent behavior.

An alert juvenile bureau will enlist the aid of colleagues on the beat to keep an eye on suspected spots where youngsters tend to hang out, especially shacks, alleys, and cellar clubs. The unsupervised clubroom in the blighted area "is a breeding place for crime. It is constantly sought by the professional thief, fence, petty gambler, or marijuana dispenser." Close co-operation with school teachers will keep the bureau informed of moral hazards in the neighborhood of the school, such as the candy store that caters to children with petty gambling devices or supplies them with pornographic magazines.

The survey staff of the California Youth Authority occasionally finds a police juvenile bureau keeping "office" hours, from 8 a.m. to 4 p.m. Since most delinquencies take place in the evening hours, the need for patrol and for the services of specially trained officers to take charge of arrested juveniles increases after 4 p.m. The survey staff also has to point out to some departments the economy of employing a sufficient clerical staff in the juvenile bureau to maintain records and to take charge of juveniles brought in while men and women officers of the bureau carry out patrols and investigations. The clerical staff can also clear all cases with the central juvenile index and the social service exchange.

The patrol duties of the juvenile bureau underline the need for policewomen, preferably with social work training. A woman has an immense advantage in working with both girls and women. Policewomen can estimate the age of girls found in questionable places much more accurately than men. California law prohibits the transportation of any female between the ages of five and eighteen, except in the presence of a woman. All interrogation of female prisoners should be conducted by or in the presence of a policewoman.

THE foregoing description of its duties indicates how closely the juvenile bureau must tie in with the schools, with the juvenile court and probation department, and with public and private recreation and welfare agencies. Indeed, the bureau's third major function is to serve as the connecting link that attaches the police department to the chain of agencies and institutions serving youth in the community. The men and women of the juvenile bureau have a job of interpretation and education to do with community councils, P.T.A.'s, women's clubs, churches, service clubs, and even with city councils and county supervisors, if the latter will permit. They can relate delinquency statistics to such factors as the locking up of school playgrounds, gyms, shops and auditoriums at 3:30 p.m., or to racial tensions and prejudice, or to unrestricted commercial amusements, or to a hundred other factors in the economic and social organization and *mores* of the community. In the improvement of conduct and the development of more satisfactory human relations, what the juvenile bureau can do to educate the community proves scarcely less important than what it can do to help or keep children out of delinquency.

Municipal Public Relations

The City Tells Its Story

By HENRY DAVIS NADIG, *Director of Public Relations, New York Regional Plan Association*

The media of MPR: 1—the press

(This is the first of several columns to be specifically devoted from time to time to the various media of MPR.)

OF ALL the channels for carrying out municipal public relations the press is the most vital.

Yet because it is the one medium usually taken most for granted (and employed most), its very use is generally neither fully gained nor efficiently handled by municipalities.

The few exceptions of efficient—and broadly rewarding—MPR operations only serve to emphasize this too common lack in municipal-government application of sound press relations methods.

The first task of the municipal public relations department, once officially established in any local government, is to create a fully operative liaison with the covering press and maintain this relationship on a high level of cooperation day in and day out, year after year. Unless the department is headed by a man equipped to accomplish this *rapport*—all other phases of the MPR work may be ineffective.

Methods in Press Relations

Working effectively with the press means action in connection with (1) regular reporter coverage, (2) news conferences, (3) news breaks, (4) special features, (5) columns, (6) editorial writing, (7) photos and (8) releases affecting all phases of local government.

To make the newsman's work smoother—to give him quick aid when and where he needs it and get him promptly to the source of information he seeks, is the MPR man's chief concerns in helping the men on City Hall beats.

His job is to indicate but not to interfere; to cooperate, but not to cajole; to persuade when desirable, but never to prescribe.

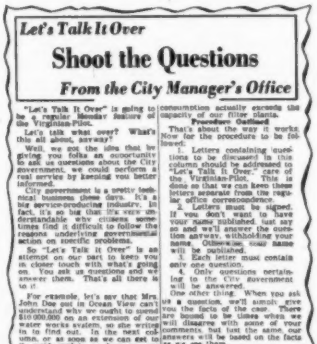
It is absoutely essential that official MPR *never* attempt to *supplant, hamstring*, or *dictate* the operations of newsmen on the City Hall or municipal departments beats, and that the MPR chief and his department shall *not* be employed to promote the personal or political prestige of the mayor or of any other municipal official. This is a fundamental two-point principle of sound MPR conduct.

Establishment of operations on this twin principle immediately removes any danger of news control by handout or by centralization, and dispels any fear that MPR may be employed as an instrument of personal or party politics.

With this principle as a basis for action, the well-qualified MPR man proceeds to make news conferences more efficient and productive, to become a real time-saving asset to reporters when spot news breaks occur, and to open sources for special features as desired. He may cooperate on the editorial side by writing an occasional or regular column and is an ever-ready reference asset to the editorial writer. To the news photographer, he's again a timesaver and a source of help in both routine, special, and spot events because of his intimate knowledge of City Hall and its personnel. News releases the wise MPR man keeps to a minimum, adjusting this phase of his work to meet local newspaper needs and producing only in line with the liaison he has established.

Because MPR as an official function of local government is so new, fears about politics and news control are bound to arise. Incidentally, they were brought up in our discussions at the Annual Conference of the National Municipal League in Boston last November. Smart municipal chief executives and sound MPR men will bring every ounce of energy to bear against any such concept or practice.

One of the purposes of the Association of Municipal Public Relations Officers, when it is eventually organized and functioning, will be to promote high professional standards in MPR, and clarify any false public impressions of what MPR really is and does. Existence of an AMPRO is necessary, if only to accomplish this and to discourage undemocratic and impractical methods—both of which are almost bound to be attempted, albeit in all earnestness.



Let's Talk It Over

Shoot the Questions

From the City Manager's Office

"Let's Talk It Over" is going to be a regular Monday feature of the Virginian-Pilot.

Let's talk what over? What's this all about, anyway?

Well, we got the idea that by giving you folks an opportunity to ask us questions about the City government, we could perform a real service by keeping you better informed.

City government is a pretty technical business these days. It's a big service-producing industry. In fact, it's so big that it's very understandable why citizens sometimes find it difficult to follow the reasons underlying governmental action on specific problems.

So "Let's Talk It Over" is an attempt on our part to keep you in closer touch with what's going on. You ask us questions and we answer them. That's all there is to it.

For example, let's say that Mrs. John Doe out in Ocean View can't understand why we ought to spend $10,000,000 on an extension of our water works system, so she writes in to find out. In the next column, or as soon as we can get to it, we'd explain as best we can why such a large expansion is necessary—even vital. We'd explain what the consequences would be if we ignored our serious water shortage, and we'd point out that during hot Summer days water consumption actually exceeds the capacity of our filter plants.

Procedure Outlined

That's about the way it works. Now for the procedure to be followed:

1. Letters containing questions to be discussed in this column should be addressed to "Let's Talk It Over," care of the Virginian-Pilot. This is done so that we can keep these letters separate from the regular office correspondence.

2. Letters must be signed. If you don't want to have your name published, just say so and we'll answer the questions anyway, withholding your name. Otherwise, your name will be published.

3. Each letter must contain only one question.

4. Only questions pertaining to the City government will be answered.

One other thing. When you ask us a question, we'll naturally give you the facts of the case. There are bound to be times when we will disagree with some of your comments, but just the same, our answers will be based on the facts as we see them.

As time goes on, and a good many letters pile up, it may be a little while before we get around to individual questions. But sooner or later each question will be answered.

Norfolk (Va.) MPR Man D. G. Weiford's latest addition to his city's MPR program is this Monday column written by him and approved by City Manager C. A. Harrell. It started last November 1.

Press Relations in England

Interestingly, this very issue is now being discussed in a significant debate taking place in England. Several officers had announced that their Councils decided that in the future the public relations officer was to be regarded as the only channel of communication between the local authority and the press.

Terence F. Usher, Manchester Information Officer, and his colleagues of the Manchester Information Service have stated their viewpoint clearly and forcefully to meet the challenge of this move to make the P.R.O. the sole channel between the local government and the press.

Last autumn Mr. Usher sent me a copy of a letter he had addressed to Alec Spoor, public relations chief of the National Association of Local Government Officials. Mr. Usher also commented "In this question, as in all other aspects of public relations, I am suspicious of any development which increases the importance of the P.R.O., unless it can be proved that there is a corresponding benefit to the press or other organization concerned and, therefore, to the general public. To my mind, this is the only possible test of any aspect of public relations."

In his letter to Mr. Spoor, Mr. Usher said, representing the Manchester MPR staff:

> We think that the main function of a P.R.O. is to make relationships easier between any two groups of people for which the P.R.O. may at any moment be

the intermediary, and although we naturally regard public relations work as very important—far more important than is realized by the people for whom we act—we think that the establishment of these happy relationships is more important than the extension of the field of public relations. If, therefore, we see an extension of public relations work, our first thought is not "will it make public relations more important?" but "will it help?"

If a council resolves that in the future all news must pass to the press through a public relations officer, and all the questions of the press must be answered through the public relations officer, does this help or does it hinder?

We think it is definitely a step in the wrong direction.

Mr. Usher presented five arguments against this "sole news channel" idea:

1. Reporters, without exception and irrespective of their own politics, or the politics of the papers they represent, say that restrictions of this kind definitely make it more difficult to obtain information, and increase the time it takes to get answers to questions.

2. One of the Town Hall reporters here, a most intelligent and cooperative man, went so far as to state categorically that the establishment of a P.R.O. as the sole news channel is the worst possible thing that could happen, from the point of view of press men. And because the result is to hinder and antagonize the press, it must be a bad thing also from the point of view of the local authority. He was willing to substantiate this with a written statement outlining his experiences. . . .

3. It prevents the press men from establishing a personal relationship with officers of the department of the corporation, tends to isolate them from the human side of the local authority, and eventually results in the loss of the friendly atmosphere of happy cooperation which should exist (and does, in fact, exist in Manchester).

4. It often prevents them from getting a "human interest" angle to sweeten an otherwise dull but vital subject.

5. If a P.R.O. is to do this part of the job satisfactorily, he must be present at the deliberations of the Council, committees and chief officers on matters of policy and on the planning of new projects which are to be carried out by the municipality. If he does this, he cannot possibly handle personally all the other aspects of municipal public relations, and must leave these to his subordinates. This, in our view, is most undesirable. In the case of Manchester, it is physically impossible to attend all the meetings, as the P.R.O. would often have to be in several places at the same time!

Mr. Usher continued his letter to the NALGO public relations officer:

Our view is that the function of a P.R.O. is to act as a news channel to *supplement*, but not to *supplant*, the direct access to committee chairmen, members of the Council and officers, which may already exist between the members and the municipality at the time of appointment of the P.R.O. If the relationship is happy, the P.R.O. must confine himself to getting to know the press men and personally telling them that if there is ever any occasion then they cannot get what they want through their usual channels, he will be delighted to try to get the information they need. If the relationship has not been satisfactory, the P.R.O. should do his best to find out why, and should use all his influence with Council, department, and press men to get the difficulties smoothed over or eliminated. This, in our view, will not be done by making the P.R.O. the sole news channel, but by discovering—

(a) *Why* reporters are not getting municipal news as fully or as quickly as they want it, or

(b) If the news is being given to reporters fully and quickly, *why* the editors are not using it.

We know that the trend is to make the P.R.O the sole news channel, and by opening up the subject for discussion, we hope not to impose our views on anyone else or to say that we are necessarily right, but merely to stimulate a lively discussion from which the truth may emerge.

I have gone to such length as this and, with his permission have quoted Mr. Usher, because there should be much here from which we in the United States may profit in the conduct of municipal public relations and particularly in officially practised MPR.

While no alert newspaper in this country will stay silent in the face of either political MPR or controlled news, at the same time our press is keenly conscious that it must protect itself and the public zealously against even the slightest, most innocuous act that might lead in that direction.

One may argue for the "sole channel" idea that it is a protection to officials as a means of preventing untoward announcements, garbled reports, breaks before they're due. But this does not stand up against the fact that a good MPR man, in official standing, can contribute immeasurably to all departments and all officials through advising and counseling them in their relations with the press.

It is pretty safe to say that there is no city hall reporter in our country who has not more than once run up against delay, insufficient facts, and buck-passing in his experience of covering the municipal beat. The good MPR man in City Hall eliminates most—if not all—of the irritation such things induce and is a real service to the press and the public.

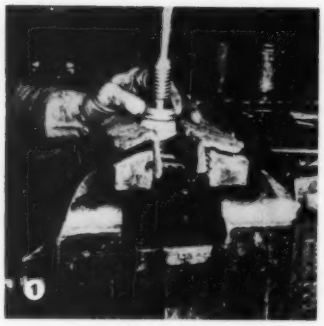
Do you know any City Hall reporter who doesn't want his task made a little smoother, a little more satisfactory? A newspaper that would spurn improved liaison with City Hall? A public that doesn't like to see its newspaper give quickly the real story with all the facts?

PHOTOS COURTESY OF WILMETTE LIFE

An understanding and cooperative press can help promote interest in local government. Late last year the officials of Wilmette, Ill., held open house. Looking on as Miss Peggy Rudd demonstrates the machine that makes out water bills are Village President William H. Alexander, Mr. and Mrs. George S. Conover, and their daughter, Carolyn. In the squad room Patrolman Charles Taylor explains a tear-gas gun to a group of villagers.

By R. A. HENDRICKSON
Crane Company
Chicago, Ill.

Maintenance and Repair



1. To remedy seat leakage in globe valves, first disassemble the valve. . . .

2. Then insert a spacer or coin inside the disc. . . .

3. Apply a light coating of emery-base grinding compound to the disc and seat. . . .

4. Reassemble body and bonnet. Oscillate hand-wheel until pitting is removed.

PROPER installation is the first requisite to low valve-maintenance costs. Following this, maintenance costs can be kept at a minimum through periodic inspection. Service conditions and frequency of operation will determine the frequency of inspection, but once the interval of valve inspection has been established, it should be made regularly and systematically; when routine inspection discloses a leak, steps should be taken immediately to correct the trouble before the valve destroys itself. Here are some suggested maintenance procedures for standard gate and globe valves.

Trouble. Stuffing-box leakage.

Remedy. Look for steam "flags"; moisture on piping or valve bodies; outright dripping. Hunt the leak under the pipe insulation by puncturing with wire at the point of suspicion, or insert a pipe nipple through the insulation at each flange joint and watch for drainage. Stop leakage by pulling up packing bolts or by tightening the gland nut. If necessary, repack the valve. Loosen the stuffing-box parts and remove old packing with bent wire or hook (Fig. 5). Clean the stuffing box. Tamp new packing into place. Add several drops of oil between the layers to help work in new material. Take care to stagger splits in the ring packing.

Trouble. Gasket leakage at bonnet or flange joint.

Remedy. Take up bolts. If this does not cure the joint leak, replace the gasket immediately; otherwise the joint faces will be ruined. Follow manufacturers' recommendations in selecting gasket material.

Trouble. Valve-seat leakage — gate valve.

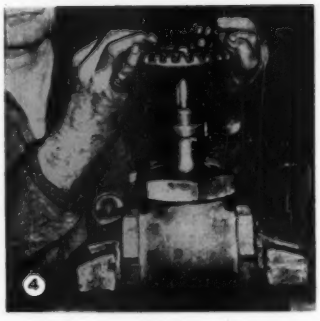
Remedy. Disassemble and examine the valve. Excessive corrosion of parts may make repairs impractical. If the valve is salvagable, first clean all parts.

Check the stem; light polishing with a fine emery cloth may be sufficient (Fig. 6).

Refinishing the seating surfaces: place the disc in a vise with the seat face up. Lap the bearing surfaces on both sides, using a fine emery cloth wrapped around a flat tool (Fig. 7).

Remove as little as possible to obtain a smooth finish. Remove cuts and scratches of the body seat rings in the same manner, using an emery block small enough to permit rubbing of seat-ring faces all around. When seating surfaces seem to be properly lapped, coat the disc face with Prussian Blue and drop the disc into the body to check the bearing.

Replacing body seat rings: If new rings are necessary, removal with a power lathe is best. Use a steel bar across the body-ring lugs to unscrew them. Hand removal can be accomplished with a cold chisel or hack saw to split the collapsed ring. Caution: Do not damage body threads. Pull new rings up tight against the shoulder. To tighten, place a steel bar across the ring lugs and pull up with a wrench. (Be sure to coat the ring threads with a good lubricant before inserting the ring into the body.) Lap in the same



Of Gate and Globe Valves

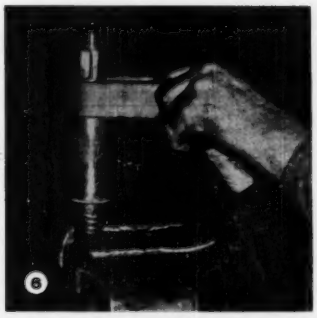
25. Occasionally valve stuffing boxes need repacking.

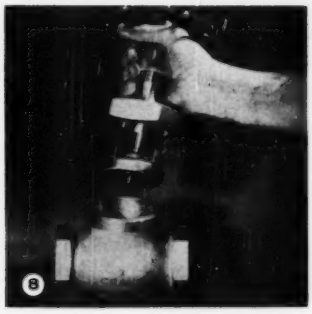
26. Light polishing may salvage gate valve stem.

27. Gate valve seating surfaces need occasional refinishing.

28. To correct globe valve seat leakage, disassemble the valve. . . .

29. Then replace the old disc, and reassemble.





manner as when repairing rings and discs.

Reassembly: Remove and replace the packing with new packing (Fig. 5). If the valve has a flat gasket, replace it with a new gasket. If it is a ring-type joint, clean the oval or octagonal ring; use it again if it is not pitted. When reassembling the valve, lift the disc off the body seat-ring face and pull the bolts up evenly in pairs diametrically opposite each other.

Trouble. Valve-seat leakage — globe and angle valves, conventional disc.

Remedy. Repairs can frequently be made without removing the valve from line. It is more desirable, however, to remove the valve for thorough inspection and cleaning. Place the valve in a vise and disassemble. Clean all parts thoroughly. Place the stem in a vise and unscrew the disc-stem ring (Fig. 1). Insert a spacer or coin inside the disc (Fig. 2). Replace the stem and tighten the disc-stem ring. (The spacer takes up clearance between the disc and the stem.) Apply a light coating of emery-base grinding compound to the disc and seat (Fig. 3). Place the body and bonnet together. If it is a union-ring type, screw the ring on partially. For a bolted bonnet insert two bolts, but do not tighten. This provides a guide for the stem. Apply pressure and oscillate the hand-wheel steadily until the pitting is removed and continuous smooth bearing is obtained (Fig. 4). When grinding is completed, clean the disc and body of all compound. Check the bearing surface with Prussian Blue. Reassemble the valve. (Be sure to remove the spacer from the disc.)

Replacing the body-seat ring: If the body-seat ring is damaged beyond repair, replace it. This can be accomplished with a special tool or with a bar fitted into the lugs or slots in the body ring.

Trouble. Valve-seat leakage — globe and angle valves, composition disc.

Remedy. Replace the disc in the composition-disc valves as soon as a seat leak is discovered. First turn the valve stem to the fully open position. Unscrew the bonnet joint and lift out the bonnet assembly (Fig. 8). Turn the stem down slightly until the disc holder slips off. Remove the disc retaining the nut and replace the old disc with a new disc (Fig. 9). Reassemble the valve.

For other articles on pipeline construction, maintenance, and service, see pages 76, 78, and 88 of this issue.

Hot Mix on Macadam Base

By PHIL A. DE LORME
Commissioner of Public Works

Raymond, Wash., completes a street-paving program covering all the downtown area

RAYMOND, Wash., population 4,350, recently completed 32 blocks of street paving and four blocks of alley paving to resurface completely all the downtown area. This is the first paving that has been placed here since 1920, when 24 blocks were paved with concrete.

The City Commission initiated the work by creating a local improvement district; and the progressive property owners backed them up and encouraged the more cautious owners to fall in line for the original 25-block project. The seven blocks subsequently laid were added under a petition by the property owners themselves, who had caught the improvement "bug" when they learned that the State Highway Department was set to pave a 24-foot strip on five blocks of primary highway.

Mayor William Gurr, Finance Commissioner Clyde L. Lewis, and the writer secured the aid of the State Finance Committee in matching $10,000 of city street funds with $20,000 of state-aid cash in order to keep the cost of the property within the local improvement district under the total assessed valuation figure required by statute. Total assessments against the property in the district amounted to $132,000. Of this, city-owned property paid $16,500. The total cost of the improvement amounted to $162,000. This was divided as follows:

Property owners	$115,000
City	26,500
State aid	20,000

The asphaltic concrete was laid on a rock-ballasted subgrade. This subgrade has been built up year after year, ever since the old tide flats were filled and the old plank streets torn out and the piling cut off. At one time Raymond was known as the "city on stilts" because of its timbered streets over the old tidelands.

The first step was to install a drainage system, then separate curb and walks. After the application of heavy rock ballast, fine material was worked into the surface to form a more solid, macadam-like subgrade, and on this was placed the 4,709 tons of hot-mix asphaltic concrete. Part of the work was laid in 10-foot strips with an Adnum paver and the balance with a Barber-Greene paver. A Galion water-filled gas roller rolled the freshly laid asphaltic concrete.

There were more than 13,000 feet of concrete curb-and-gutter laid with this project, and nearly 5,700 square yards of concrete sidewalk along with over 700 square yards of concrete driveway. The work included 2,550 lineal feet of 8-inch concrete sewer pipe, 53 catch basins, and 15 manholes, and required adjusting 33 existing manholes and catch basins.

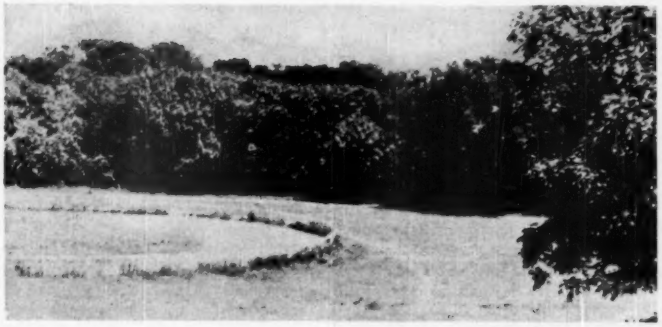
A Galion water-filled roller compacts the freshly laid asphaltic concrete. ▶

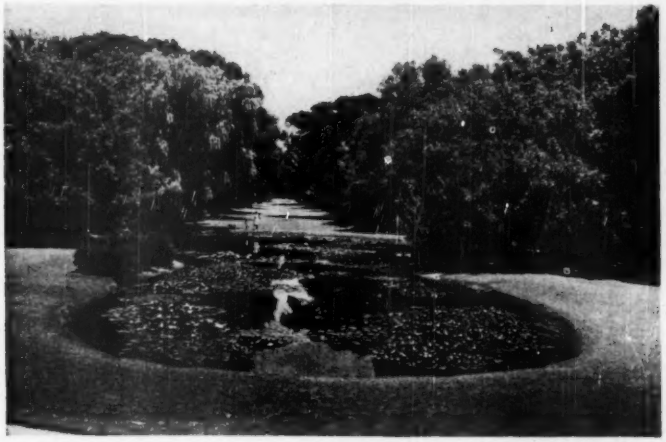
This gives the whole story of the Raymond paving work: concrete curb, heavy rock ballast, fine grade, and asphaltic concrete paving. It also shows an inlet casting adjusted to final grade. ◤

Here is the finished street to carry the traffic. ▼

No. 3 of a series of "before and after" views of notable public improvements

As Was—and As Is





The top picture shows the terrain before construction of the Fort Worth Botanic Garden. The two lower photographs show vistas in the completed Garden.

The Fort Worth Botanic Garden

THE site of the Garden was once a gathering place for the Indians because of its perennial springs, which still supply water for the chain of lakes in the park. Near by is the spot where the first white man, Ed Terrell, camped in the county in 1843. Before development, the Garden was a marshy bog skirting the riverfront where cattle stood in the heat of summer among the cattails and swung their tails to ward off the flies, while they munched on watercress and other native greens.

The Garden was dedicated on October 15, 1933. The guest speaker was the late Dr. J. Horace McFarland, of Harrisburg, Pa.

Over a period of years, the Garden has entertained celebrities from all parts of the world. It is not at all uncommon to find perhaps 20,000 persons in the Garden on a single Sunday when the dahlias, roses, and chrysanthemums are in bloom.

One of the reasons that the Garden became a reality was that the Park Board long had a well-drawn plan. When relief labor was available the plan was quickly put into effect. It is a credible piece of work.

Those in charge say that the Garden is quite something more than a mere beauty spot—it is a real sanctuary for the soul of man. It has paid for itself many times over in providing esthetic enjoyment to the public.

MRS. WILL F. LAKE
Member, Board of Park Commissioners
Fort Worth, Texas

Does your city merit a place in this series?

If so, *The American City* will welcome "before and after" views for possible use in a future issue.

Comic Book Control Can Be a Success

By the REV. THOMAS A. ALLPORT
Bellingham, Wash.

DURING the early part of the summer of 1948, Mayor Don E. Satterlee of the City of Bellingham, Wash., disturbed at the type of reading material that was falling into the hands of the juvenile population, asked the city's Censor Board to investigate this problem.

In line with this request a special committee within the Censor Board was appointed, composed of the following: Rev. Thomas A. Allport, Pastor of St. Mark's Lutheran Church, Chairman; Miss B. Brennan, school teacher; Mrs. M. A. Montgomery, housewife and mother; and Mrs. Mabelle Truman, W.C.T.U. representatives.

The first step, in the opinion of the committee, was to enlist the cooperation of the two distributors operating within the city. The distributors agreed to furnish us with copies of all their "comics," and the study began. It was apparent from the start that a system of judging was going to be necessary, and with this thought in mind the magazines were placed into five separate classifications — Crime, Fantasy, Animal Cartoon, Western, and General. In the General classification we listed magazines that were generally accepted, such as *Boots and Her Buddies, Little Orphan Annie, Maggie and Jiggs, Moon Mullins,* etc.

Rating the Magazine

After the classification into these five categories, it was decided to rate the magazines on the basis of what we would like in a comic magazine. The positive approach was used because of the power of suggestion. Going on from here, the following points were used as a basis for our judgment:

1. The story should be interesting;
2. Should not glorify crime or human depravity;
3. Should have clean illustrations (morally);
4. Should have no vulgar or profane language;
5. Upholds the authority of the law;
6. Upholds the dignity of women;
7. Violence is subdued;
8. Does not cheapen human life;
9. Story is not morbid in content;
10. Does not cheapen human values;
11. Has legibility.

After the compilation of such a list upon which to base our judgment, the magazines were reviewed and rated accordingly. A minus sign was used if the "comic" did not measure up to the points listed and a plus sign used if it was acceptable. With the even points constantly before us and the "comics" classified, the magazines were rated. When a "comic" failed to gain a majority of the positive ratings, it was rejected. It is interesting to note that in this system the majority of the "comics" rejected were in the Crime classification, with their lurid illustrations and vivid portrayal of the crime. In these magazines, the sensational was emphasized and so portrayed that it seemed to be the natural way of life for the reader. There seemed to be nothing unusual, for instance, about a semi-clad girl being submitted to torture or to the visual portrayal of many bestial acts of violence committed not only by adults but by children as well.

It is when the publishers of such stories go to such lengths as this to portray the unnatural and inhuman with such clarity, and fail to deal with the punishment of the perpetrators of the crime which is thus presented, that the story becomes distorted. While we realize that crimes like these have been committed, what purpose is served in a presentation of this kind, especially when we are dealing with extremely impressionable, immature minds to a large extent?

67 Magazines Found Objectionable

In our reviewing of some 278 magazines, 67 have been found objectionable. Each magazine has been rated accordingly and dealt with individually. The publishers have the right to question our decisions and are given the opportunity to examine our master chart. The distributors in our city have given us their very fine cooperation and have been furnished with a photostatic copy of our complete report.

The magazines that were submitted to the Censor Board are kept on file to safeguard our findings. If this were not done, many magazines could challenge our findings on the basis of their current release, which in many cases are much improved. In the case of rejected magazines that have been removed from our stands and a request made for their return, three current issues must be submitted and approved before these magazines are released to the newsstands. At present we have five magazines that are being submitted for our approval.

This started as a local project and has gained some publicity throughout the country. To date some twenty-five requests have come from cities which are planning similar action.

In the planning of such a program as this, it is of the utmost importance to set up guideposts to test one's judgments. There may be mistakes in our program, but it has given us a definite method of censorship that can be applied not only at this time but may be used as a continuous pattern of control.

EDITORIAL NOTE. Publishers of comics magazines have become increasingly aware of their public responsibilities. Last July, fourteen of the publishers organized the Association of Comics Magazine Publishers, Inc., whose membership includes 40% of the volume of circulation of the industry, and adopted a code of minimum standards for future publications.

Executive Director of the Association, whose address is 205 E. 42nd St., New York 17, N. Y., is Henry Edward Schultz, President of the Board of Queens College and member of the New York City Board of Higher Education. An Advisory Committee was appointed on December 6 to take positive steps toward improving comics magazines and making maximum use of them as a medium for education. Committee members are John E. Wade, retired Superintendent of Schools of the City of New York; Dr. Ordway Tead, Chairman of the Board of Higher Education of the City of New York, and Dr. Charles F. Gosnell, New York State Librarian.

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A 10-page report on "Municipal Control of Objectionable Comic Books" has been published by the United States Conference of Mayors, 730 Jackson Place, NW., Washington 6, D. C. Another report, "Comic Books—Municipal Control of Sale and Distribution—A Preminary Study," by Charles S. Rhyne, is available for $1.00 from the National Institute of Municipal Law Officers at the same address. See page 153 of THE AMERICAN CITY for December for an article by Mr. Rhyne on this subject.

Another View on Comic Book Control*

By DAVE McGUIRE
City Director of Public Relations
New Orleans, La.

IN ANALYZING what is bad for the kiddies, too many critics fail to consider what the kiddies want, or even what is available to them.

The old-line book publishers have failed in the task of printing and marketing low-cost books acceptable to the six-to-ten-year-old group. Very few good books for this market sell under 50 cents.

Some progressive libraries, including the New Orleans Public Library, have begun reading clubs and programs designed to stimulate the interest of youngsters in good books. Much good can undoubtedly be accomplished in this direction, but again it is up to the parent to help get the child into the library and to follow up in directing his interests into the realm of better literature. With the cost and scarcity of paper what it is, there appears to be little chance of any early serious competition in the juvenile field from the book publisher.

Then, too, relatively few children go into the bookstores where the limited number of inexpensive children's titles are available. But almost all tots and 'teen-agers go into drug stores, where the colorful ten-cent comic magazines fairly leap at their curious eyes.

Our study convinces us that some of the critics of the comics, well-meaning though they may be, are subject to criticism themselves on these counts:

1. For attacking the problem after a cursory glance at a few of the more horrible examples of comic magazines.
2. For failing to recognize there are good as well as harmful comic books.
3. For believing that passage of a law is a panacea to this end and any other social problem.
4. For failing to follow through on the very obvious tack that the key to improving the situation is public opinion of parents and organizations.

We further believe that some of the more extreme national critics of the comic books and the cartoon art form have been motivated more by a desire for publicity than a sincere interest to achieve corrective results. Similarly, do we deplore the negative efforts of certain leading cartoonists to present all comicbookland as a utopia of human behavior and the classics and fairy tales as unfit for children. The influence of the National Cartoonist Society would be better used in a constructive, positive attempt to reform or eliminate the dead-end kids of the industry.

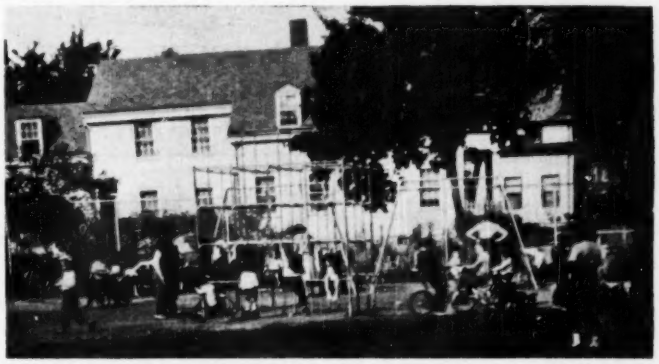
We must face the fact that a majority of the present generation of children—the first in world history—have been weaned on a literary diet of comic books. Their younger brothers and playmates are daily becoming addicts.

That is why realistic public officials, organizations, and parents must assume that comic books are here to stay—and at once set about taking sensible and effective means to promote the use of the better comic magazines and the improvement or elimination of the worst.

That is why it is heartening to see the national and local parent-teacher groups and other organizations interesting themselves in a matter that concerns every home in the community.

* From the excellent and thorough 59-page *Report on Comic Books to the Mayor and Commission Council of New Orleans*, prepared by Mr. McGuire.

"Totlots" Made from Vacant Lots



A view of one typical Totlot used by children under six at Cambridge. The entire area is surrounded by a Security Fence Company link fence.

IT doesn't take much space or equipment to provide play area for children of pre-school age. Frequently they are overlooked in favor of adequate playgrounds for the older children. Play areas for pre-school children are needed particularly where back-yard space is inadequate.

However, Cambridge, Mass. (population 118,075, 1940 census) hasn't missed them. In fact it has developed 17 such areas taking advantage of ordinary wasted vacant lots. The areas selected have space, shade, and are provided with a suitable surface. Part of the space is usually paved for tricycles and other children's vehicles. The balance is left in grass.

Use of Gross-Receipts Taxes Increases

DURING recent years many cities have adopted gross-receipts taxes on local businesses and utilities. Examples of recent action are the 10% gross-receipts tax on amusements in St. Petersburg, Fla.; a tax of one-tenth of one per cent on the gross revenue of all manufacturing, wholesale, and retail establishments in Aberdeen, Wash.; doubling of the 5% utility tax in Gainesville, Fla., and a 3% tax on the gross passenger revenues of the street railway company in Youngstown, Ohio. These gross-receipts taxes in some cities replace flat-rate license fees.

A survey recently made by the International City Managers Association among 14 cities shows that taxes levied on the gross-receipts basis will produce approximately $10,330,000 this year. Revenues range from $36,800 in Roswell, N. M., to $2,591,000 in Kansas City, Mo. Based on the experience of these 14 cities, the International City Managers Association has published a report entitled, "The Administration of Business Gross Receipts Taxes," which discusses types of tax-rate structures, cost of collection, methods of tax enforcement, exemptions, taxing out-of-city sales, taxing mixed businesses, and handling tax avoidance, protests, and refunds. Copies of the report have been distributed to officials of cities subscribing to the Association's Management Information Service.

Sewer Velocities Required For Kitchen-Ground Wastes

By KENNETH W. COSENS
Assistant Professor of Civil Engineering
University of Texas

and

ERIC J. HANEMANN
Sanitary Engineer
Gilbert Associates, Inc.
Houston, Texas

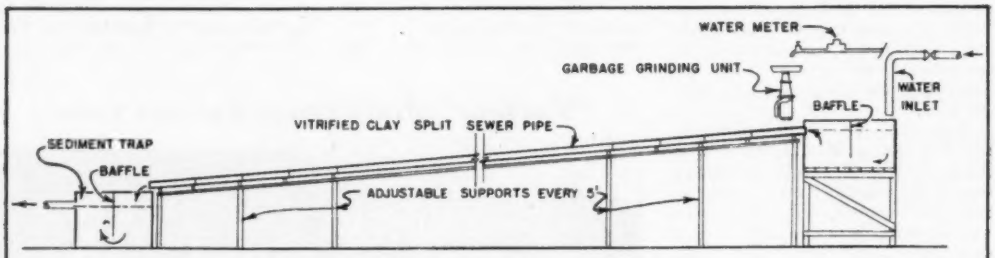


DIAGRAM OF TEST APPARATUS

GRINDING garbage in the home and disposing of it through sewers has been viewed with disfavor by many municipalities, fearing that such practice would unduly increase the burden upon the sewage collection and disposal facilities. Some cities have prohibited the installation of home-grinding units; others have discouraged their use in various ways. One important question concerns the ability of sewers to transport the heavy ground-garbage solids if present sewer design standards were followed. It was felt that we could not be sure whether sewers laid on the minimum recommended grades and having limited flows would transport the heavy solids found in domestic garbage. Operating experience at some sewage-treatment plants where municipal garbage was ground and injected into sewage-sludge digesters, indicated that stoppages of lines carrying the garbage solids did occur, and that the offending material was composed mainly of egg-shells. This led to an investigation of transporting velocities for heavy ground garbage solids conducted at the University of Texas.

Description of Apparatus

Two important phases of the problem were: (1) the production of ground garbage solids, and (2) provision for a sewer pipeline with suitable water flow to study the movement of ground solids.

The test line was a 60-foot pipe made of 8-inch vitrified clay, laid in half-round sections and supported in a cradle adjustable to any reasonable slope desired. The roughness coefficient in the Manning formula was experimentally found to be 0.012 in the 8-inch line.

This provided a desirable means of studying characteristics of sedimentation and transportation of solids and very closely reproduced actual sewer conditions. It was possible to provide uniform flow of water in this pipe in any desired amount, from a trickle to nearly half full.

This typical deposit formed when the grinder operated at minimum flow, and no flow existed in the sewer. The deposit consists of egg shells.

Test Observations

During the series of tests the slope of the sewer pipe was set at 0.10%, 0.20%, 0.30%, and 0.40%. At each different slope sufficient quantity of water was provided to give a depth of flow of 0.2 and 0.4 of the full pipe diameter. Observations were also noted when the flow in the pipe came solely from the small amount of water needed to operate the grinder. During the series of tests the following materials were passed through the grinder: ordinary domestic garbage, date pits, bone, olive pits, and eggshells.

Regardless of the slope of the pipe or the material passing through the grinder, a typical deposit developed at the discharge point of the grinder when the flow in the sewer pipe was only the amount necessary to operate the grinder interlock (a stock model Disposall disposer was used).

With a 0.10% grade and only the flow needed to operate the grinder, eggshells produced the typical deposit, extending for 4½ feet and piling to a height of ⅜ inch. When bone was ground there was less deposit, for two reasons: First, the specific gravity is less, eggshell being 2.30 and bone 2.08.

Second, the bone is not deposited as rapidly as eggshell because the grinding operation takes longer. Typical kitchen refuse was also passed through the grinder producing less deposit and a more extended one. Most of the lighter materials floated out of the pipe but the heavier solids, bone and eggshell, were left.

When the flow was increased to the 0.2 depth (1⅝ inches), the deposit was noted to move along the sewer pipe in much the same way that snow or sand drifts. The velocity of the eggshell deposit was at the rate of 0.14 foot per minute; bone moved at the rate of 0.35 foot per minute; and with domestic garbage the entire charge was transported at nearly the velocity of the water, except for the eggshells and some bone fragments, which formed a small deposit that moved by the typical drifting action. When the depth of flow was increased to 0.4 of the diameter (3-3/16 inches), the typical deposit was formed except for the upstream portion. This small part of the deposit located upstream from the grinder was present only when the total flow was that required to operate the grinder; at other flows it did not form. The speed of the eggshell deposit was 0.85 foot per minute, but the ground bone was soon dispersed.

The grade was increased to 0.20% and the three depth-of-flow conditions observed using bone and eggshell. Typical deposits were formed at the minimum flow stage. At 0.14 depth (1½ inches), the eggshell deposit moved at 0.18 foot per minute and bone at 1.32 feet per minute. At the 0.4 depth the eggshell deposit drifted at 2.5 feet per minute, while the bone did not form a deposit, but was immedatedly dispersed in the pipe flow.

Eggshell was the most troublesome of the materials studied. With the slope of the pipe adjusted to 0.30%, eggshell produced a typical deposit for minimum flow conditions. At an 0.2 depth flow, the deposit drifted at a rate of 0.67 foot per minute, and at 0.4 depth, at a speed of 6.67 feet per minute.

With the slope increased to 0.40%, the typical deposit was formed at minimum flow conditions, although it was considerably elongated. At the 0.2 and 0.4 depths, the velocity of the deposit was 2.32 and 13.11 feet per minute, respectively.

Additional runs were made, using date pits (specific gravity, 1.41) and olive pits (specific gravity 1.35), but, as expected, they did not cause as much trouble as either bone or eggshell.

It has been found in actual practice that discharging ground-garbage solids into sewer mains or trunks will cause no trouble, providing ample flow and velocity are maintained.

In no urban area are there enough kitchen garbage grinders to furnish a conclusive answer to the question: What will the ground food wastes do to the city's sewers?

This article reports recent laboratory studies conducted at the University of Texas directed at giving this answer. Their studies showed that ground food wastes will be transported successfully in sewers laid at minimum grade and having limited intermittent flows. The tests included all types of kitchen wastes reported to have caused trouble in certain sewers.

There is an indication that deposits will form in the upper ends of 8-inch laterals, but it can be shown that the discharge of other household plumbing fixtures such as water closets, will produce flow sufficently great to transport the deposit a short distance.

This study indicated that eggshells could be transported at an average rate of 0.14 foot per minute by a mean water velocity of 0.68 foot per second. Thus a mean water velocity of 1.0 foot per second would be satisfactory. It may be noted that an 8-inch sewer, laid on the minimum recommended grade of 0.4%, will have a velocity flowing full of 2.05 feet per second. To obtain a velocity of 1.0 foot per second would require that the line flow at the 0.17 depth, at 6% of its full capacity or at 20.5 gallons per minute. The average discharge rate of several types of water closets investigated was found to be 23 gallons per minute. This would produce sufficient flow to move the deposit some distance down the pipe, where it would remain until another increase in flow occurred. Other household plumbing would probably not help flush solids down the sewer as well as water closets because of lower discharge rates.

After careful consideration of the data obtained in this study, it is evident that present design standards of 8-inch sanitary sewers are adequate and need no revision in the event universal grinding of garbage is adopted. A study is in progress to investigate flow conditions in 6-inch and 4-inch vitrified clay pipe when carrying ground eggshells and using several different types of grinders. The results will be reported as soon as the study is completed.

Mobile, Ala., Football Stadium

DEDICATED October 1st, the Ernest F. Ladd Memorial Stadium in Mobile, Ala., is shown packed with 36,000 persons for the exciting Alabama-Vanderbilt football game. Unique feature of the stadium's management is that it is operated by a non-profit-sharing corporation and, under its charter, all net profits must be used for stadium improvement or for development of public parks and playgrounds in Mobile County. The city donated the site, worth $135,000, and the rest of the cost of the stadium, $850,000, was given by business and personal friends of Mr. Ladd, former head of the Merchants National Bank, and the bank itself. Joe J. Mason, former Director of Recreation for Miami, is the stadium's manager.

Manila Wants to Know

Sanitary engineer tells of post-war refuse disposal in his city, and The American City lists outstanding water-works, sewage-treatment, and refuse-disposal projects for him to visit while in the United States

To the Editor of THE AMERICAN CITY:

SEVERAL months ago you wrote me for information about useful municipal engineering projects in Manila. At that time we had nothing worth saying, because rebuilding was just being started as a result of the devastation caused by the war. Today, I may say, we have done some improvement along refuse collection and disposal.

The City of Manila, with the aid of funds from the United States Public Health Service, has acquired the Dempster Dumpster garbage-collecting unit, consisting of one hoisting unit, 13 stationary buckets, and two collectors, or buckets on wheels, costing $18,215, and a 2-cubic-yard Drott bull-clam shovel with tractor for refuse disposal at $13,000. With this equipment we were able to improve the refuse-collection and disposal system in the city. Both the trench and the area methods of sanitary fill are being used. These machines will ultimately replace the wornout army-surplus equipment we have now. Thanks to THE AMERICAN CITY, which publishes articles on sanitation, we were able to read of and select the proper equipment.

At the present time I am in Berkeley, Calif., taking some courses in sanitary engineering. I plan to visit the new incinerator in Norfolk, Va., described in the May issue of your magazine. In this connection, I would like to ask you the favor of recommending some places for me to see, where sanitary engineering works like water-purication plants, sewage-treatment plants, and other city sanitation activities for refuse disposal can be found.

Respectfully,

LEOPOLDO REYES
Assistant Sanitary Engineer
Manila Health Department

THE AMERICAN CITY'S Reply

Dear Mr. Reyes:

IT IS indeed a pleasure to suggest cities and other locations where you will find significant sanitary engineering work being done. First, you should avail yourself of all the good information in the San Francisco area. San Francisco, as you undoubtedly know, has one of the largest sanitary-fill projects in the country. There also you will find a sewage-treatment plant operating in the midst of a big public park. This municipal improvement is positive evidence that sewage-treatment plants can be operated continuously without odor nuisance. Ralph Wadsworth, San Francisco's capable City Engineer, has commented that the average citizen in San Francisco does not even know the city has a plant there. He would certainly be glad to arrange a visit to it: it uses the interesting elutriation process to condition the sludge prior to vacuum filtering.

Be sure also to see Walter Frickstad, Oakland's city engineer. He will be helpful in showing you good examples of municipal sanitation in his city.

We also suggest that you visit Reuben Brown, Superintendent of Sewer Maintenance in Los Angeles. As you may know, Los Angeles has had a difficult sewerage problem for many years and now is on the road to solving it. Mr. Brown has done significant work with an oxidizing agent known as Cloroben that has saved the city a great deal of money. You may also find it useful for many sanitation purposes in Manila. While in Los Angeles, it would be helpful to visit Long Beach and ask Superintendent of Sewerage D. R. Kennedy to show you the handy Sidu sewer ball used for cleaning sewer mains. Perhaps you read the article describing it in THE AMERICAN CITY for July.

At Fort Worth, Texas, you would find Mr. H. H. Hester, Superintendent of Street Cleaning, very happy to show you his well-engineered street-cleaning program. Fort Worth also has a smoothly operating sanitary-fill program.

Oklahoma City

If in traveling east you can include a stop at Oklahoma City, you would be well repaid by visiting Mr. M. B. Cunningham, Superintendent of Water Supply. He has a new filter plant that incorporates a remarkable number of new, progressive water-treatment developments. He uses Anthrafilt instead of sand in his filter beds; not a new idea, but one that is not generally applied. He recarbonates the water with an Ozark underwater burner, the only one our staff has ever seen used in this fashion. He was an early user of the popular breakpoint-chlorination process and has for some time used the hexametaphosphate, Calgon, to overcome aggressive tendencies in the water. His chemical handling is skillful.

Then, if you can, you should go to Lawrence, Kans., where Major C. Hagar is in charge of the water department. Mr. Hagar is not an army man. His first name is Major, which has caused a great deal of confusion to those who do not know him and much amusement to himself. Mr. Hagar was a pioneer in the use of chlorine dioxide and can tell you about its use and applications. He also has on trial the new Alhydro electrically charged aluminum plates that produce a floc in the water normally furnished by alum or iron salts. If you see him, be sure to tell him that he is behind schedule on that article he promised us, for publication in THE AMERICAN CITY.

River Infiltration

There are many other excellent water-works systems that you might visit. Kansas City and St. Louis, Mo., are good examples, but to make as diversified an itinerary as possible, you might try including Kirkwood, Mo. Here Joseph Kruegel, Water Superintendent, has used river infiltration instead of going to the expense of building a treatment plant. To get this supply he has located a Ranney collector in a good water-bearing strata along the Meramec River. There is not much to see when you look at the collector, but you will get a lot of good information about it when talking with Mr. Kruegel. We have a story about it in our October issue.

If you wish to learn more about the possibilities of an infiltration supply, we would recommend your going to Des Moines, Iowa. Dale Maffitt, General Manager of the Des Moines Water Board, operates the plant. It provides a classic example of water supply by river infiltration through long underground galleries. It has been mentioned in many authoritative textbooks on water supply. Des Moines also has a sewage-treatment plant notable for the fact that it sells the gas from the digestion process to the local utility furnishing the electric power, and as a result comes out with a favorable balance.

A short distance from Des Moines, you will find Marshalltown, Iowa. H. V. Pedersen, Water Superintendent there, has done interesting work recalcining lime sludge used in water softening.

It would be helpful for you to see the famous activated-sludge sewage treatment in Milwaukee, managed by James L. Ferebee, Chief Engineer, and the world's largest water-filtration plant being built at Chicago. W. W. DeBerard, Chicago City Engineer, would be glad to help you there. Much fine sewage-treatment work is also being done in Chicago under the direction of the well-known engineer—Langdon Pearce. The interesting garbage-reduction plant at Indianapolis also merits careful inspection. W. H. Frazier, Superintendent of Sewage Treatment, manages the plant and is turning a nice profit over to the city each year from a product that normally is wasted.

Refuse Disposal

At Marion, Ind., the garbage is ground in a central station and sent through the sewage-treatment plant. David Backmeyer, Superintendent of Sewage, operates this plant very skillfully. The operation provides an abundance of digested gas used to power pumps and blowers in his plant. Incidentally, Anderson, Ind., is only a short distance away. This city also uses a Ranney water collector.

Detroit, Mich., has a fine set of incinerators using the Nichols mechanical-stoking designs. With it, the city has been able to roll up an enviable record of operating efficiency. Public Works Director Glenn Richards has been responsible for much of the work done with them.

Lansing, Mich., is another city whose refuse-disposal methods are worth studying. This city has what many feel is the most sanitary collection system in the United States. The department collects the garbage cans, delivers them to a central grinding station, and empties and cleans them, leaving a clean can at the doorstep of the householder. We are sure Mr. Glenn Manz, Superintendent of Public Service, will be delighted to show you this system.

Atlanta Incinerator

While examining refuse-disposal facilities, by all means visit the incinerator at Atlanta, Ga. This city has been generating steam from the refuse-burning operation since 1925, and has been selling this steam to the local utility. The incinerator, built in 1940, uses an interesting rotary-kiln design that the operators recommend highly. Atlanta is probably the only city in the United States using this design. The sale of steam is paying for the capitalized cost of the plant so that the only expense Atlanta has to assume is that of operation.

You spoke of visiting the Norfolk, Va., incinerator, developed by Nye, which was reported in our May issue, and which is notable for being one of the largest plants ever built without the use of the customary storage pit. Norfolk's Director of Public Works, H. H. George, and Assistant Director S. C. Morisette, will be pleased to have you inspect their books supporting their record of low operating cost, and demonstrating the "direct dump" side of the direct dump versus the bin-and-crane argument.

While in that vicinity, we recommend that you stop at Washington, D. C., and introduce yourself to William Xanten, Superintendent of Street Cleaning and Refuse Collection in our nation's capital city. Bill is well known all over the world for his leadership in this phase of municipal sanitation, and we know he will be glad to show you how his department operates. It also would be helpful to see the refuse-collection and disposal service furnished by the Washington Suburban Sanitary District, Hyattsville, Md., just outside of Washington. This incinerator is very attractively designed, uses the Nichols automatic-stoking principles, and has a storage pit using a single monorail crane to service it.

Garbage-Sludge

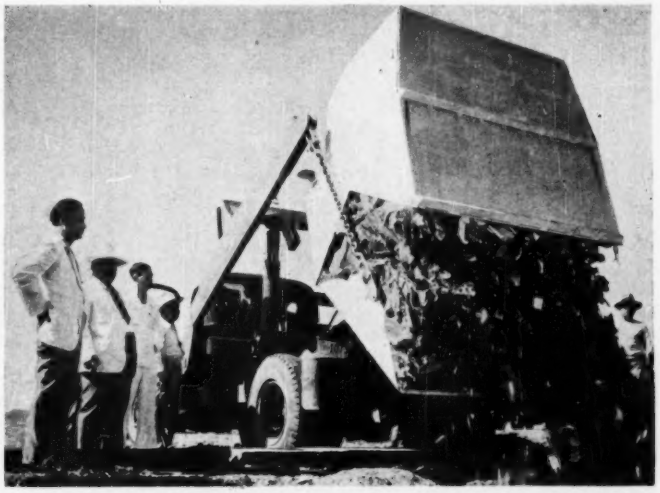
Frederick, Md., also has an interesting plant. In this city the sludge from the sewage treatment is combined with the refuse and destroyed in the same incinerator. Either Mr. Whitman or Mr. Requardt, of Whitman, Requardt and Associates, Baltimore, Md., can tell you about it, since their firm designed this plant.

You will want to stop in Baltimore, anyway. This will give you an opportunity to meet, among others, the internationally famous sanitary engineer, Dr. Abel Wolman of Johns Hopkins University, and that stimulating consultant A. L. Genter, developer of the elutriation process. The Baltimore sewage-treatment plant also is certainly worth inspecting.

Of course, one can extend this survey almost indefinitely. It would be a shame not to meet those two famous sanitation authorities at Rutgers University, Drs. Willem Rudolfs and H. Heukelekian. You may also want to see the new sewage-treatment plant being built at Philadelphia, and the water-treatment plant as well, which uses ozone for sterilization instead of chlorine. And you would find profitable a visit to the new dams being built by New York City's Board of Water supply. Of course, every sanitary engineer reaching New York finds much of value in the city's system of sewage-treatment plants, developed under the guidance of Richard Gould, Director of the Division of Sewage Disposal, and Wellington Donaldson, Deputy Director of the same division.

When you complete such a trip you will no doubt be impressed by the diversified opinions, often on major points, held by so many really fine engineers. Of course, that is where one's own engineering judgment comes into play, and is an added reason why the engineering profession is so interesting.

THE AMERICAN CITY



Left to right, Mr. Emilio Ejercito, City Sanitary Engineer, Mayor Manuel de la Fuente of Manila, and Dr. Mariano Icasiano, City Health Engineer, watch the Dempster container unloading the refuse into the sanitary-fill trench. Funds for the purchase of the equipment were obtained from the aid given by the U. S. Public Health Service in the Philippines.

Hydraulic Ram

Water Department capitalizes on a favorable water situation and pumps water for approximately one tenth the estimated cost of pumping by electricity

Cuts Water-Pumping Costs

THE age-old principle of pumping water by means of the hydraulic ram is working for the city of Auburn, Wash., supplying water pumping needs at a cost estimated at one-tenth of the cost of equivalent electric power. This is possible because Auburn's favorable location permits an excess of water available at a reasonable head.

How They Work

B. C. Gosney, Water Superintendent, gives a report on these hydraulic rams. He states that they have been in operation since 1925, and have been operating continuously the year round. There are five of these rams, products of the Johnson Manufacturing Company of Seattle, Wash. They connect to a 3-mile, 24-inch, wood-stave pipeline and operate three at a time, with the other two reserved for standby.

The hydraulic rams utilize kinetic power that produces water hammer—an effect that engineers try hard to avoid in most pipelines. To operate, a valve first opens, allowing the water to go to waste. When the flow has reached a predetermined velocity, the force of the current closes this waste valve, thus forcing the water through the discharge valve into the delivery pipe. When the stored energy of the water is exhausted the discharge valve closes, thus retaining the water pumped. The waste valve opens again and the cycle is repeated. This action is automatic and continual. The ram does in one operation the work of both motor and pump.

The ram tank is located on a hill 200 feet from and 40 feet above the pumphouse floor level. There are separate 12-inch lines that discharge water under a uniform 41-foot head to the 12-inch rams. The rams operate at 42 cycles per minute. This has proved to be the optimum speed for Auburn needs. A slower speed lowers the height of pumping but pumps more water. Higher speeds pump less water, but furnish more in proportion to the water passing through the ram.

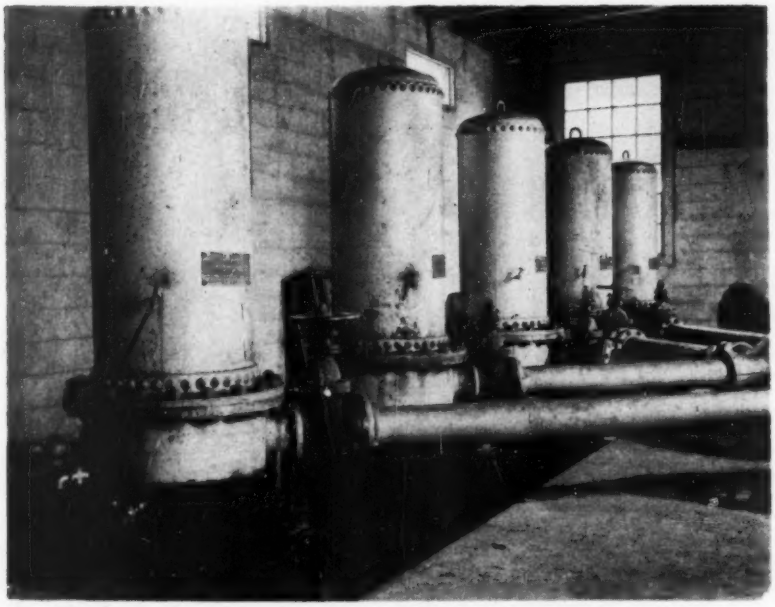
Auxiliary Electric Power

When the rams were installed in 1925, Superintendent Gosney reports that they were adequate for the city. Since that time, the water use has more than doubled. To make up the difference, the city has installed a 4-inch DeLaval centrifugal pump capable of producing 900 gpm against a pressure of 75 psi. The pump, powered by a 50-hp Westinghouse motor, reclaims the waste water from the rams. There is also a 3-inch DeLaval centrifugal pump powered by a 30-hp Westinghouse motor which delivers 500 gpm. For its first five months the small electric pump has operated a total of 1,216 hours, or an average of 243 hours per month, at an average cost of .347 cents per hour.

The ram uses about 75% of the water supplied to pump the remaining 25% into the city mains. The auxiliary electric pump averages 160 pump hours per year to pump 23,700 gallons per day at a cost of $175. This means that it cost nearly 50% of the total operating cost of the plant for electricity to pump less than 10% of the water.

Maintenance Low

Maintenance costs on the rams have been low, Mr. Gosney reports. These have involved largely a corrosion problems in the drive pipe.



This battery of hydraulic rams does the bulk of the water pumping for Auburn.

Planned Fire Protection Pays Off

By HAROLD A. FLECHSIG
Fire Chief
Roseville, Mich.

FOUR pieces of apparatus, all shown here, handle all fires in the township of Erin, Mich., as well as in our own Village of Roseville, population 9,000. Our fleet is all white, though one of the photographs shows our oldest piece while still painted the conventional red. We find that white is not only more attractive, but that white is more conspicuous at night.

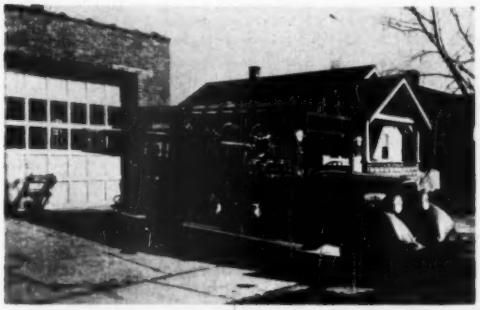
Starting from the beginning, we reassembled a 1926 Peter Pirsch pumping engine on a 1935 Dodge chassis. In 1947 we dismounted the Pirsch equipment and installed on this chassis a 600-gpm pump and a new 115-hp engine. This truck, the "red one," also carries a 40-foot aluminum ladder and a portable deluge gun.

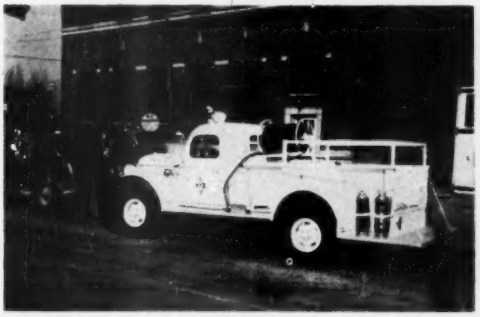
In 1940 the Township purchased a 1940 Dodge chassis of 1½-ton capacity. On this the General Detroit Corporation installed a 500-gpm pump and booster tank of the same capacity. This unit was turned over to my department. On June 1, 1948, this truck was equipped with a two-way radio which as far as I know is the first time a pumping engine was so equipped in Michigan.

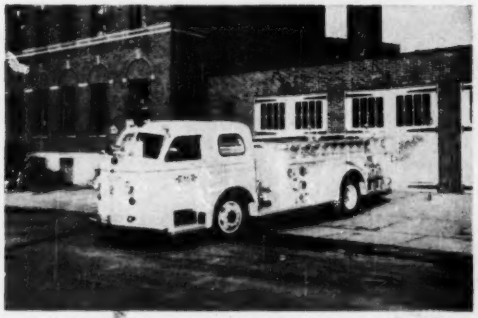
In 1946 we purchased a new Dodge power wagon and built it into a firefighter. We installed a 150-gallon booster tank and a 150-gallon power takeoff pump with a high-pressure fog nozzle. The truck has four-wheel-drive, can pump as it moves either forward or backward, and is used mainly for grass fires. By means of a track in the body, we load or unload our portable lighting equipment in accordance with the type and time of a fire. This truck was designed, built, painted, and lettered by myself and volunteers.

In the same year, 1946, we ordered a 1000-gallon American-LaFrance pumping engine which was delivered in August, 1947. It carries a folding ladder, a 24-foot extension ladder, and a 14-foot roof ladder. The hose consists of 1,500 feet of 2½-inch and 600 feet of 1½-inch. One compartment holds 800 feet of the 2½-inch siamesed into two 1½-inch lines of 100 feet each. This gives us two lines on a fire in the first lay. Other equipment consists of two Scott Air-Paks, four Suredry salvage covers, and a quad-way fog nozzle. This American-LaFrance is the cab-ahead-of-engine type powered by a 104-hp motor.

Personnel consists of two paid men alternating 24-hour shifts, 18 volunteers, and 3 auxiliary men. We have mutual agreements with the cities of Centerline, 2 trucks; East Detroit, 2 trucks; Village of St. Clair Shores, 2 trucks, 1 high-pressure truck; Frazer, 2 trucks; Township of Warren, 3 trucks; and we work with Clinton Township, 1 truck. Hence, we have 17 fire trucks and about 110 firemen available. At a lumber-yard fire in Roseville we used 7 pieces of apparatus, 87 firemen, and 1 ambulance through this agreement.







Oldest to youngest Roseville fire fighters. Top left, Peter Pirsch 600-gallon pumping engine not yet painted white, as of August 1, 1948. Top right, General Detroit 500-gallon pumping engine with 500-gallon booster tank. Lower left, utility unit with 150-gallon pump used on grass fires. Lower right, 1,000-gallon American LaFrance pumping engine.

Midland, Mich., uses an Austin-Western sweeper.

Then the Scoopmobile loads the leaves into trucks.

Leaf-Gathering Methods Change

Mechanical equipment makes the fall task easier

NEW equipment designed to make leaf gathering easier is gradually changing the practices of public works men. This point came out in a round-table discussion on street-cleaning practices held recently at the American Public Works Association's annual meeting in Boston, Mass.

The use of the new vacuum blowers appeared to be growing in many cities. Chief complaint was that the blowers discharging into a truck created a dust nuisance. Silas McBee, Director of Service of High Point, N. C., stated that he had been able to overcome this difficulty by covering the truck box with oil-soaked burlap. Mr. McBee uses an American Structural Steel leaf blower with good results.

The use of the blowers had made it possible for cities to encourage the raking of leaves into the gutter, where they are picked up by city forces. The blowers also make it possible to prohibit burning the leaves in the gutter, a practice that damages the pavement.

Walter M. Swetlik, Commissioner of Public Works at Milwaukee, Wis., expressed a preference for the tractors with front-end loaders. Charles A. Johnson, Superintendent of Public Works, Midland, Mich., also reports good results with this type of leaf-gathering equipment.

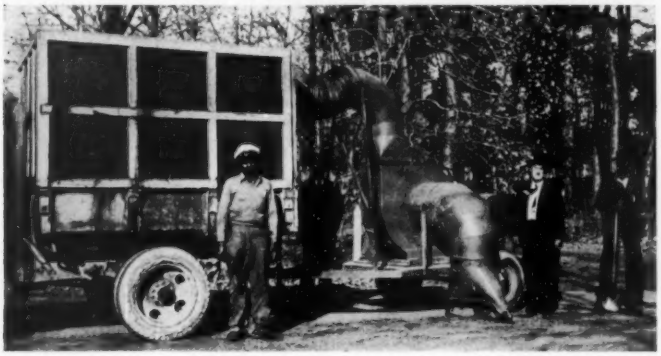
Superintendent Johnson stated that he uses a Scoopmobile for leaf gathering operations, and for back-filling and other operations during the rest of the year.

"We sprinkle the leaves before loading to insure better operation," he said. "There are two ways of doing this. One is to gather the leaves with the leaf-gatherer attached to the sweeper, and then pick up the piles with the Scoopmobile. The other method is to run the Scoopmobile parallel to the curb until the bucket is full. This method has one disadvantage: the leaves pile up and spill on the lawns at the curb."

In the spring, his crews clean all the gutters with the Scoopmobile and the sweeper with one hand laborer. This is done by running the Scoopmobile, made by the Mixermobile Manufacturers of Portland, Ore., parallel to the

(*Continued on Page* 123)

Right: Milwaukee adds leaf gathering to the many other tasks performed by its Hough Payloader. Below: At High Point, N. C., this leaf blower discharges into a box with oil-soaked burlap sides. This effectively stops any dust nuisance. Note that the blower and the box are mounted on separate trailers.



Meter Reading—What It Entails

THE task of finding how much water each householder or business has used during a billing period constitutes an important and interesting factor in the operation of any water department.

How often should a water utility read a meter? And what constitutes good practice in the meter-reading operation? These questions may not bear directly on the rate structure used, but certainly have their place in a consideration of water rates.

The more frequent practice followed today is to bill for water every month. It probably is one of those costly traditions followed because the grocer, the landlord, and the charge account merchant all send their bills "on the first," and it is felt that the water works should also. Of the water utilities whose rate summaries have appeared in our magazine during recent months, those billing on a monthly schedule outnumber the rest by more than five to one.

Nevertheless, one frequently hears the plea by leaders in the water-works field that this monthly billing is not necessary. During the war, when manpower became so scarce, many water services discovered that their customers were willing to be billed an estimated amount monthly. Discrepancies would be corrected when the meter readers arrived on something like a six-month schedule. Some had success asking the customer to enter the meter-dial markings on the card instead of sending a meter reader around.

Those are, however, emergency measures. Assuming that peacetime operation is our normal state of affairs, what can one do to keep the meter-reading and billing operation from being too large a function in the water-department routine?

G. E. Arnold, Director of the San Diego, Calif., Water Department, says that meters should not be read oftener than once every two months except for the heavy users. The water bill, he feels, is a relatively small portion of the household expense, not comparing with rent or groceries, and billing once every two months would not be an economic imposition.

But that is not the only action that a water service can take to make meter reading and billing efficient. Here are other suggestions made by the late Egmont Smith, formerly district manager of the Neptune Meter Co., with offices in Dallas, Texas. Mr. Smith was well known among water works officials in the Southwest. These are the recommendations that he has made in the past:

1. Lay out routes for short travel time.
2. Train substitutes or alternates. In large systems use employees not regularly employed as meter readers. Never have a lone meter reader in any system.
2. Use looseleaf notebook with reversible sheets. Carry the name and address of customer at the bottom. Make entries from the bottom to top for easy subtraction.
4. Make entries in hundreds of gallons. On the printed bill print two 00's in the proper place to save bookkeeping.
5. If there are over 2,000 customers, use billing machines.
6. Do not dun by postcard.
7. Adopt a firm policy regarding payment, 12 to 15 days after final note. Non-payment is neither good political nor humanitarian policy.
8. Stagger readings to avoid accounting rush. Lay the town out by districts.
9. Be sure you have a good meter box and the meter is in a good location.

These suggestions bear on points that should prove interesting to many operators. One is that postcards should not be used for duns. Most authorities agree that it is an invasion of personal privacy to dun by postcard and therefor illegal. Nevertheless many water works do follow this practice without complaint from the customers. In fact, El Dorado, Kans., has adopted the practice of making a post-card check. All the customer has to do is sign the postcard, and it will be presented to his bank for payment (see page 103 of THE AMERICAN CITY for December 1948).

With a good meter-reading organization, and not too frequent a meter-reading schedule, this phase of the water service can be performed without its usurping an undue portion of the water-works routine.

Stockton, Calif.

Raters Per Month

The following shall apply to water used in the months of January, February, March, October, November, and December of each calendar year.

First	600 cu. ft.	.....	$1.00
Next	1,900 " "	.....	18.5c per 100 cu. ft.
"	3,500 " "	.....	11.5c " " " "
"	34,000 " "	.....	7.0c " " " "
"	20,000 " "	.....	6.5c " " " "
Over	60,000 " "	.....	4.5c " " " "

The following shall apply to water used in the months of April, May, June, July, August and September of each calendar year.

First	600 cu. ft.	.....	$1.00
Next	1,900 " "	.....	11.5c per 100 cu. ft.
"	3,500 " "	.....	9.5c " " " "
"	34,000 " "	.....	7.0c " " " "
"	20,000 " "	.....	6.5c " " " "
Over	60,000 " "	.....	4.5c " " " "

Minimum Charge

1"	meter or less	$1.00 per month
1½"	"	1.50 " "
2"	"	2.00 " "
3"	"	3.00 " "
4"	"	4.00 " "
6"	"	6.00 " "
8"	"	8.00 " "

Special Rate for Private Fire Extinguishing Service

4"	connection	$4.00 per month
6"	"	6.00 " "
8"	"	8.00 " "

Municipal Fire Hydrant Rate

Water for fire hydrants, owned by city, per hydrant per month $1.00

General Data

Population served	95,000
Services (100% metered)	22,000
Hydrants	958
Miles of mains	235.8
Storage, ground	2 mgd
Storage, overhead	2.2 mgd
Supply	Mountain streams
Treatment	Chlorine
Plant capacity	40 mgd

Customer Costs

4,500 gals.	(600 cu. ft.)	$1.00
5,000 "	(667 " ")	1.08
10,000 "	(1,333 " ")	2.36

These rates were established in 1940.

FRANK SUTERS, *Manager*
California Water Service Co.
Stockton Division

Pomona, Calif.

Water Rates Per Month

Minimum Charges Meter	Charge	*Cu. Ft.* Allowed
¾"	$1.20	800
¾"	1.40	1,000
1"	1.70	1,300
1½"	2.40	2,000
2"	2.70	2,300

Metered Charge

From minimum to 5,000 cu. ft. 10c 100 cu. ft.
All over 8c 100 cu. ft.

Rates outside the city are 30% higher. There is a 25% penalty for delayed payment.

General Data

Population served	36,000
Services (100% metered)	9,500
Supply: Deep wells fed from mountain streams	
Treatment	None
Average demand	4.6 mgd
Plant capacity	8 mgd

Customer Charges ¾" Meter

3,000 gals.	(400 cu. ft.)	$1.20
5,000 "	(667 " ")	1.20
10,000 "	(1,333 " ")	1.73

These rates went into effect in May 1948.

Pomona pays $34,000 per year on a bond issue and approximately $20,000 interest on bonds from Water Department revenue. There is a fire-plug rental charge of $1,800 per year.

FRED C. FROEHDE
City Engineer

Ossining, N. Y.

Rates Per Quarter

First 10,000 cu. ft.	27c per 100 cu. ft.
Next 40,000 " "	21c " " "
Next 50,000 " "	22c " " "
All over	20c " " "

Service Charges

⅝" meter	$ 2.00 per quarter
¾" "	2.00 " "
1" "	3.00 " "
1½" "	5.00 " "
2" "	10.00 " "
3" "	20.00 " "
4" "	30.00 " "
6" "	50.00 " "

Rates in the town of Ossining, outside of the Corporation limits of the Village of Ossining, will be 50% more than the charges for the same services rendered in the Village of Ossining.

General Data

Population served	14,000
Services (100% metered)	3,000
Hydrants	415
Valves	825
Miles of mains	40.2
Service levels	3
Supply	Streams
Treatment	Rapid sand filter
Storage, ground	12 mg
Storage, overhead	0.5
Average demand	1.1 mgd
Plant capacity	2 mgd

Water Characteristics

CaCO.—40 ppm.
Fe, Mn—Trace
pH—8.5
Temperature—40° to 78° F.

Customer Costs Per Month

3,000 gals. (400 cu. ft.)	$1.75
5,000 " (667 " ")	2 47
10,000 " (1,333 " ")	4.27

These rates were established in February 1948. During 1947, the Board had an arrangement with the Village of Ossining which provided for payment of an annual fire-hydrant rental at an average of $35 per hydrant; however, this was in effect only for one year and the increase in rates in 1948 was partly due to lack of this income.

No contribution is made to the General Fund of the village but free water is furnished for all municipal uses.

WALLACE MILLER
Superintendent

Tuscaloosa, Ala.

Rates Per Month

First 950 cu. ft.	$2.00
Next 2,500 " "	.21 per 100 cu. ft.
" 1,700 " "	.19 " " "
" 1,700 " "	.18 " " "
" 1,700 " "	.16 " " "
" 8,400 " "	.12 " " "
" 50,100 " "	.10 " " "
" 100,000 " "	.074 " " "
All over	.063 " " "

Minimum Charge

⅝" meter	$2.00
¾" "	2.70
1" "	4.20
1½" "	5 70
3" "	11.70
3" "	17.80
4" "	26.34
6" "	52.00
8" "	76.44

General Data

Population served	50,000
Services (100% metered)	8,400
Hydrants	450
Miles of mains	150
Service levels	2
Supply	Impounded creek
Treatment	Rapid sand filter
Storage, overhead	2.75 mg
Average demand	6 mgd
Plant capacity	9 mgd

Water Characteristics

$CaCO_3$—18 ppm. Fe, Mn—trace. pH—8.6. Temperature—46-65° F.

Customer Costs

3,000 gals. (400 cu. ft.)	$2.00
5,000 " (667 " ")	2.00
10,000 " (1,333 " ")	2.80

There is no charge to the city for fire hydrants. The Water Department donates $50,000 per year to the city's general fund.

C. S. READ
Water Superintendent

Metropolitan Growth Problems Probed

University of Michigan makes study of Flint community

By AMOS H. HAWLEY
Associate Professor of Sociology
Director, The Social Science Research Project

FLINT, Mich., is being used as a laboratory for the study of metropolitan development problems by the University of Michigan, with the cooperation and backing of officials and citizens in the Flint area. That the metropolitan community is rapidly becoming the most significant urban unit has been recognized by social scientists at the University of Michigan for over a decade. It has also been generally appreciated that nothing less than a multi-disciplined approach could do justice to the problems of metropolitan expansion. In 1946, after some 15 years of cooperative research experience, these attitudes were embodied in the Social Science Research Project, the name given to a joint undertaking between the University and the community of Flint. Although the project is jointly financed by the two sponsors, it is under the administrative supervision of the Institute for Human Adjustment of which Clark Tibbits is the Director, and which is part of the Horace H. Rackham School of Graduate Studies.

Conceived as an agency for both graduate research-training and community service, the Social Science Research Project consists of two units. The teaching unit, located on the campus, is the Metropolitan Community Seminar in which faculty members from six different departments and Research Fellows in the Project meet to analyze and guide the research in progress.[1] The second unit is a field office situated at the research site with personnel that includes a full-time Resident Director — J. Douglas Carroll, Jr. — and a clerical assistant. Three functions are served by the field-office staff. It aids Research Fellows in gaining access to local sources of data, it carries on independent research, and it interprets the methods and results of research to the community at large. Of considerable importance to the success of the Project is an Advisory Board composed of representative citizens of the Flint community.[2] This board advises on matters of general policy and also assists in securing local cooperation.

While the selection of research problems to be investigated is guided largely by academic considerations, attention is given, whenever possible, to the needs of the community. For the most part, however, service to the community is rendered by publishing the completed studies for general distribution and, when called upon, supplying interpretations of their contents to local officials or to the public at large. The making of recommendations on the basis of research findings is, by mutual agreement, the exclusive responsibility of the local community. Hence the two functions of the Project, graduate research training and service to the metropolitan community, complement one another in what has proven to be a highly efficient arrangement.

The research concluded thus far has covered a variety of topics. The territorial scope of Flint's influence has been delimited and future populations of the city and the metropolitan area have been forecast. Historic trends of population distribution have been analyzed, while another study has dealt intensively with the factors associated with intra-community migration. The problems of local government in that part of the metropolitan area lying outside the city are dealt with in a fifth report. Research has also been done in the factors affecting the administration of a metropolitan library service, the effects of a 15-mill property-tax limitation on the quality of municipal service, the problems of annexation, and many other such problems. Currently the Project is involved in a concerted study of the causes and effects of the irregular development of metropolitan lands.[3]

1. This faculty group, which also functions as the Executive Committee of the Project, includes Professors Gardner Ackley, Economics; Arthur W. Bromage, Political Science; Robert S. Ford, Public Administration; Robert B. Hall, Geography; Amos Hawley, Sociology, and John W. Hyde, City Planning.

2. Members of the Advisory Board are: Carl W. Bonbright, Chairman, and Mark W. Bills, Dr. Max Burnell, Arthur L. Crawley, Harlow H. Curtice, Michael A. Gorman, C. S. Harding Mott, Arthur H. Sarvis, and S. S. Stewart.

3. Copies of the mimeographed reports may be obtained at nominal cost from the University of Michigan Press.

HOW SIOUX FALLS

Supplies Good Streets

This shows how the streets look after treatment. The curb-and-gutter and the gravel base were laid in 1947. The oil mat went on in 1948.

By F. H. WILLIAMS
Superintendent of Streets
Sioux Falls, S. Dak.

Low-cost construction in the residential area is made possible by the city-owned gravel plant and a continuing program of bituminous mat construction

PROPERTY owners in Sioux Falls, S. Dak. (population 45,000), are getting a system of street improvements in the residential area at a direct cost of about 20 cents per runnng foot of street. This, of course, is not the entire cost of the paving program, but its set-up may be interesting to others whose problems are similar to ours. The program, developed by Commissioner of Streets Bert T. Yeager, is proving immensely popular with the people. It is providing a clean, all-weather, dust-free street in areas that normally cannot afford the more expensive type of paving.

Our city has about five square miles of area and about 220 miles of streets, of which 70 miles are of high-grade paving and the rest of gravel and dirt. For a number of years the city has kept gravel on the streets, even where some of the streets have never been officially graded. Some of these streets have had four to six coats of gravel applied, as mud from the dirt streets had covered an existing layer, or a utility had excavated for a main and destroyed the surface. Consequently, some streets were from 10 to 14 inches too high. Others, where wash had taken place, were below grade. That was the condition in 1940, just before the war. It prompted us to adopt an improvement program that included the following work each year:

- 2 to 4 miles of storm sewer
- 3 to 8 miles of street paving
- 8 to 12 miles of curb and gutter
- ½ to 2 miles of high-type paving
- 60 to 75 blocks of blacktop paving

The storm sewer and blacktop paving became the joint responsibility of the Sewer Department and the Street Department, along with their regular maintenance. The others are let by contract.

Cobbled streets also had the bumps removed by the surface treatment.

The city is fortunately situated for gravel deposits. We maintain a Pioneer roller-type gravel-crusher plant which has been supplying a well-graded product for many years. A typical screen analysis would show these results:

Screen	*% Passing*
1 inch	100
¼ inch	85
#4	65
#10	50
#20	40
#40	35
#100	15
#200	0

The practice has been to furnish gravel without special assessment against the property owners.

On the present streets, the property owners are required to supply a curb-and-gutter section to supply adequate drainage and give strength to the oil material that is subsequently applied. As every engineer familiar with street construction knows, the edge of the pavement is its weakest point.

Construction Procedure

After the curb-and-gutter is in, the city regrades the street to fit, leaving it about 0.3 feet low for the new gravel.

First we seal the road bed, using MC-1 cutback asphalt at 0.2 gallon per square yard. Then we lay the gravel base with a cut-back asphalt for a stabilizer. The asphalt is SC-3, applied to provide 4½ to 5½% bitumen. We add 20 pounds of Nostrip per 1,000 gallons of asphalt to this to improve the coating effect and make the mix more workable. The material is blade-mixed in place to form a mat two inches thick.

After allowing traffic on it for two or three months, we go back and seal

An asphalt mat goes on a residential street in Sioux Falls.

the surface, using emulsion. We apply 0.30 gallon per square yard and blot it with chips of crushed material produced in our pit at the same time we are making road gravel. This is applied at the rate of 15 pounds per square yard and has a top size of ¼ inch.

The city does the work and furnishes the gravel free of charge. Property owners pay 20 cents per running foot for the asphalt, which about covers the cost. At the beginning of this program requests for oil mat were slow until the public could see the improvements of the streets at low cost to them. Now we have more requests than we can take care of in the coming year.

Rio de Janeiro's Mayor Proposes Site-Value Taxation

By AMERICO WERNECK, JR.

A COMPLETE reform of real-estate taxation, abolishing the rates on the rental value of buildings and shifting them to the value of land apart from improvements, is now under consideration in Brazil's capital city. On June 23, 1948, General Angelo Mendes de Morais, Mayor of Rio de Janeiro, addressed a message (n. 14) to the City Council embodying this proposal.

The Federal District, to which the new rates would apply, has an area of 1,100 square kilometers, and a population (as of January 1, 1947) of 2,014,185. The District is governed by the Mayor of Rio de Janeiro, who is appointed by the President of Brazil with the approval of the Federal Senate. The local legislative body is a Council of 50 members (now temporarily reduced to 32 after 18 Communist members lost their mandates when their party was declared illegal.

The Present System

At present, the real-estate taxation in Rio de Janeiro (Federal District) is as follows:

(a) A land tax (*imposto territorial*) levied on urban *vacant* land and on all agricultural land apart from improvements (plantations, etc.. The rate varies from 5% to 0.5% on the land value (5% in the commercial center, 3%, 2%, 1.5% in the urban residential districts, 1.5% and 1% in the suburban districts, and 0.5% in the rural districts). Agricultural land is exempted when owner cultivates at least one-half of the area.

(b) A tax on buildings (*imposto predial*) levied on the annual rental value of the buildings. The tax rate varies from 12% down to 6% on the annual rental value (12% and 10% in the commercial center and urban residential districts, 10% and 8% in the suburban districts, and 6% in the rural districts). About 250,000 landed properties pay the building tax (*imposto predial*). About 100,000 landed properties pay the land tax (*imposto territorial*). The two taxes are mutually incompatible and cannot be levied together on the same property.

The rates as proposed in the Mayor's message are 4% for the landed properties located in urban districts (commercial and residential), 3.5% in the suburban districts, and 2.5% in the rural districts. The plan will be applied in three distinct steps as follows:

The Proposed Reform

First Step — All newly built-upon landed properties, where buildings shall become completed and ready for use after December 31, 1949, will be included in the next taxation on the value of the land alone.

Second Step—All landed properties which shall be transferred by sale to new owners after December 31, 1951, will be included in the new taxation.

Third Step — After December 31, 1954, all of the remaining landed properties will come under operation of the new taxation, thus completing the plan. However, since this is the *dangerous* step of the reform, the plan stipulates that, if the amount of the new tax on the land values be higher than the amount paid in 1954 on the rental value, the annual increase of the new tax cannot be higher than 10% of the amount due in 1954. For instance, if an old building pays 100 in 1954 (on the rental value) and should pay 200 in 1955 (on the land value) the amount really due will be 110 in 1955, 120 in 1956, 130 in 1957, and so on until the amount due equals the value of the new tax on the land value.

Another point to be noted in the reform is that, although the land value is the value to be imposed on, the proposed law stipulates that the *taxed value* shall not be lower than one-third of the capital value of any landed property (land and improvements). This, of course, is not in accordance with true land-value policy, since in some cases a small part of the improvements may be hit by tax on land. But this deviation from the principle was considered necessary until people get used to the new system and forget the idea of any relation between the tax and annual rental value of improvements.

This is the Rio de Janeiro Plan which is now being discussed in the city council, where it is being strongly supported by Councilman Dr. Joao Machado and his friends.

Snow Removal in Kansas City, Mo.

A Balderson snowplow mounted on the front of a Caterpillar diesel No. 12 helps make easier the task of clearing the Kansas City, Mo., street of snow.

A NEW YEAR—A NEW Approach to Municipal Problems

NMP—symbolizing a unified approach to the development of a dynamic national municipal program and policy—received strong endorsement from the 500 delegates who attended the American Municipal Association's twenty-fifth annual meeting in Washington, D. C., December 12-15. Free thinking and expression characterized the discussions, which led to the formulation of resolutions and policy statements on a number of issues of major concern to all municipalities, large or small.

Tackles Problem on National Basis

The meeting was the first national attempt to organize a municipal-action program on a comprehensive basis. The conference program was almost completely devoid of "brass hats and big names," and a spirit of keen interest in the deliberations was evinced by the delegates from individual cities and the state leagues, representing in all 9,500 municipalities. Through the efforts of the reorganized AMA staff, headed by Carl H. Chatters, executive director, and under the statesmanlike guidance of Mayor Fletcher Bowron, outgoing AMA president, municipal muscles were flexed and hardened at a strategic time—with much of the Congressional legislative program still in a flexible and formative stage. It is expected that the policy statements and resolutions adopted will carry much weight in the campaign to get what urban residents need from Congress and the state legislatures.

"Our mission for 1949 is to make the AMA the real voice of America on municipal affairs," declared Mayor deLesseps S. Morrison of New Orleans, who was elected the new AMA president.

Policy statements were approved on the following subjects during the conference: Housing, Creating Respect and Recognition for Municipal Officials, Home Rule for American Cities, Payment in Lieu of Taxes on State and Federal Property, and Municipal Finance. The Association's members voted to defer action on a civil-defense policy statement until the Federal Government makes some move to act with regard to the recommendations of the Hopley Report of the Office of Defense Planning. However, the importance of adequate planning for disaster preparedness was made clear.

One of the most stimulating of the sessions was that devoted to housing, chaired by William Devin, Mayor of Seattle. Municipal representatives from throughout the country testified to the importance of low-rent, slum-clearance, and public-housing programs. The statement finally adopted included sections on municipal responsibility for adequate planning and for exercise of urban redevelopment procedures; expanded programs of federal credit and research into lower-cost production techniques; immediate passage of legislation similar to the T-E-W bill, and completion of previously authorized war-frozen housing projects by means of additional loans and raising of construction limits; and special consideration of local problems in the disposal of temporary wartime housing.

The need for home rule over local affairs, as well as for greater flexibility in approach to problems which are a mixture of local and state and even federal concern, was emphasized in the session on this subject. Several unique state-constitutional situations were described. Mayor Morrison outlined the situation in Louisiana where the state administration embarked on a program of punitive interference aimed at the City of New Orleans. Some of the restrictive bills were passed, he said, but a concerted campaign was conducted by civic groups, the press, and the city government throughout the state against nine "power-grab amendments" to the state constitution which were all defeated in the November 2 election.

Secretary of the Treasury John W. Snyder, who spoke at the Association's annual luncheon, promised to work with municipal officials in reallocation of tax sources to assure municipalities of a broader revenue base. A resolution had been passed earlier in the conference asking the elimination of federal excise taxes on admissions and amusements as peculiarly suited to municipal resource. Other resolutions adopted included the following subjects:

- Amendment of the Social Security Act to include municipal employees under a plan of permissive coverage;
- Reapportionment of shares of highway-user taxes to be used for local streets on the basis of use;
- Authority for municipalities to withhold key employees for civil-defense purposes from draft in the event of an emergency;
- Restoration by Congress to the states of complete title and ownership of tidelands;
- Enactment by Congress of a workable program for the removal of all substandard temporary war-housing units and the rehousing of present occupants in permanent standard housing;
- Continuation by Congress of appropriations to the Civil Aeronautics Administration for air-traffic control-tower operation;
- Protest against interference by the CAA in matters of business administration at municipal airports;
- Support of measures to permit payment of increased amounts by the federal government in lieu of taxes on public-housing projects under prevailing contracts;
- Commendation of Census Bureau research;
- Extension of time limits for Federal Works Agency approval of local project plans and specifications.

"Municipal Legislators Discuss Councilman-Chief Executive Relationships" is on page 7 of this issue.

Other AMA Conference Highlights

John Huss, Executive Director, Michigan Municipal League, was elected vice-president of the AMA. New members of the Board of Trustees are John Delaney, Mayor, Perth Amboy, N. J., and A. L. Sargent, Executive Secretary, Illinois Municipal League.

States Can Help Solve Municipal Revenue Problems

Since municipalities are creatures of the state, cooperation between local governments and the state is a pre-requisite for a sound solution of the local revenue problem. There are five basic ways in which the states may aid:

1. By restricting and curtailing tax limitations and exemptions.
2. By broadening the taxing powers of municipalities so as to permit reasonable diversification in local revenue systems.
3. By broadening and liberalizing the distribution of state revenues to local governments.
4. By refraining from the enactment of mandatory local expenditure measures unless new revenue sources are specifically provided to finance such measures.
5. By recognizing metropolitan areas as constituting a new level of government.

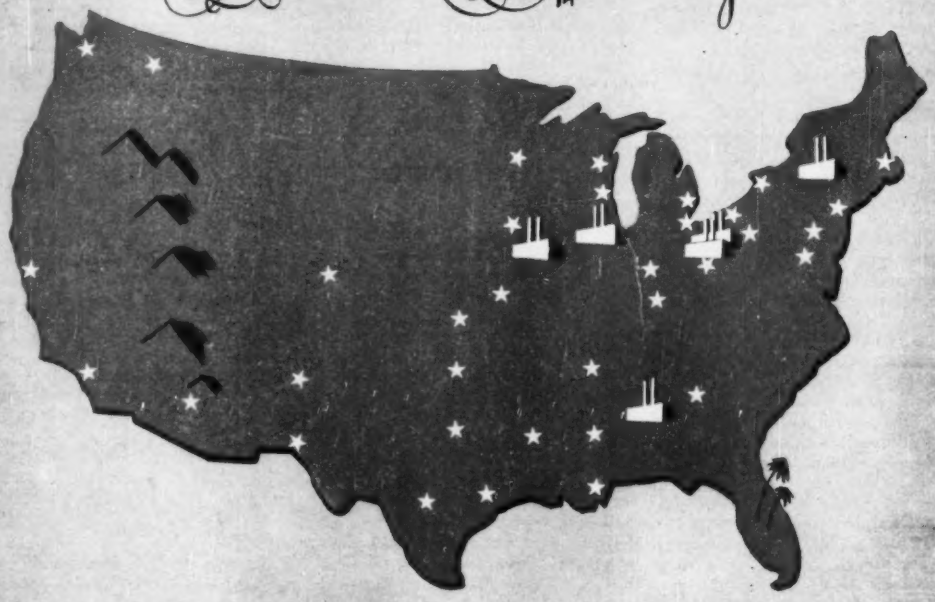
CHARLES J. FOX, *City Auditor Boston, Mass.*

Present Debt Limits Outmoded

Nearly every state has a municipal debt limit, fixed like that of New York, being a percentage based on the assessed valuation of real estate. There was logic to fixing a debt limit on assessed valuation of real estate in the days when real estate paid for the operation of municipal government almost exclusively. However, that is no longer the case. According to the "Summary of City Government Finances in

from across the nation
the employees of James B. Clow & Sons send

Seasons Greetings



and wish their customers a prosperous New Year

Yes, the year 1949 should mean prosperity for all of us. For the first time since the war, the Clow organization can now anticipate filling your orders more promptly . . . and meeting all shipping dates as promised. With this in mind, let us plan to go forward together and do our share to meet the huge postwar expansion program for bringing better living conditions to all people.

JAMES B. CLOW & SONS CHICAGO

CAST IRON

and their National Cast Iron Pipe Division, Birmingham, Ala.; subsidiaries Eddy Valve Co., Waterford, N. Y.; Iowa Valve Co., Oskaloosa, Ia.

1947," issued by the United States Department of Commerce in October 1948, property taxes provided only 56.4% of municipal revenues. This decline has been continuous and is continuing. Future debt limits should not only be related to real estate assessments, but should also be expanded so as to be related to non-property taxes.

WILLIAM REID
Chairman, Board of Transportation
New York, N. Y.

Public Relations Programs Needed

People are very tax-conscious these days. But the public seldom expresses its tax consciousness on the national or state levels. Instead the citizen focuses his tax resentment on municipal officials, holding them responsible to a surprising degree not only for school and county taxes but even for the burdens of state and federal taxation. The public never has an opportunity on the national and state levels to vote on adoption or retention of a tax. But when a worthy and even vital local improvement is on the ballot for approval, the bond issue is often defeated, even though it would add insignificantly to the total burden of taxation.

City officials must energetically develop and implement a sound public relations program aimed at separating in the public mind the realities of municipal problems and finance from those of other units of government. City councilmen should assume leadership in their cities in selling the public on constructive programs for community betterment. To the public's question of "How can we afford to spend the money?" they can often answer, "How can we afford *not* to spend the money?" Making funds available with which to undertake the tasks essential to community progress should be a principal objective of local politics.

FRED WATSON, *Mayor*
San Jose, Calif.

Multiple Uses For Soil Cement

THE use of soil cement need not be confined to street, highway, and airport paving, according to the Portland Cement Association. It also can be used for various backfilling operations where insurance against shrinkage and swelling is important.

As an example, backfilling adjacent to bridge abutments can be improved greatly by enabling the builders to eliminate the expensive, difficult operation of extensive compaction with pneumatic tools and similar equipment. Soil cement, blended with a pug-mill mixer, using soil on the site, will produce a mass having low volume change and shrinkage characteristics with normal compaction. Soil cement has been employed for this purpose on the Houston, Texas, expressway and the Baltimore, Md., airport.

In large embankments where settlement is a critical factor, soil cement also can provide the necessary control. A large-capacity continuous pug-mill mixer would prove useful. The bonding of successive layers into the sheepsfoot-roller marks of the preceding layer prevents the formation of seepage planes.

Impervious cores to earth dams may be constructed of soil cement, as may be cut-off walls to form water barriers. Settlement of backfill in utility cuts in city streets also may be controlled if the fill is replaced with soil cement. This will allow use of the pavement for other construction immediately, and will avoid possible future maintenance difficulties.

Providence Chamber Sponsors Town Meetings

THE first in a series of annual town meetings on civic improvements has been successfully concluded in Providence, R. I., under the sponsorship of the Civic Planning and Traffic Board of the Providence Chamber of Commerce. For these forums, the Executive Committee of the Board decided to concentrate on four subjects—recreation, traffic, parking, and housing—as problems needing immediate attention and deserving particular emphasis.

Four forums were planned, to be held on Tuesday and Thursday nights during a two-week period at the Rhode Island School of Design Museum. An exhibit covering the four subjects was also held at the museum.

When the skeleton plans for the Town Meetings were completed, the Civic Planning and Traffic Board solicited the cooperation of service clubs, educational institutions, and other organizations throughout the city. More than forty of them responded enthusiastically and became co-sponsors.

Each forum had a nationally known expert as its keynote speaker. The moderators were selected from outstanding civic leaders in the community. On the Forum Panels were representatives of various local groups interested in the subjects under discussion.

Newspaper coverage of the events was excellent throughout the two-week period. Two radio stations, one an FM station and the other an AM station, covered the Forums with live programs. The Forums were all well attended and proved a definite success. They gave the public an opportunity to analyze progress and brought into focus the community's thinking on four major fields of civic interest. It is hoped that the conclusions arrived at during the Forums will serve as the basis for future action.

JOHN E. VANCE, *Manager*
Civic Planning and Traffic Board
Providence Chamber of Commerce

TOWN MEETING FORUMS
To be held at The Rhode Island SCHOOL OF DESIGN MUSEUM – 224 Benefit Street – 8 P. M.
RECREATION
TRAFFIC
PARKING
HOUSING

Shown above is the inside of the four-fold announcement used to help arouse interest in the Providence Town Meeting Forums.

Steel TRAFFIC CONES made of RUBBER

This amazing new cone assures perfect traffic control because of its steel-like authoritative appearance. Yet it does not present any traffic hazard because it is made of safe collapsible rubber.

LOW COST — LONG LIFE

Many man-hours are now consumed building wire, wood, concrete, flags and other markers. This represents a great cost considering frequent replacement necessary through breakage, distortion and wear. One of the outstanding features of the TRAFFICONE is the durable flexible rubber construction which will stand years of constant rough treatment. There is also absolutely no breakage or distortion with the TRAFFICONE.

TRAFFIC BARRIERS AND LANE CHANNELING CAN BE SET UP IN APPROXIMATELY 1/10 THE TIME.

The lightweight flexibility of the TRAFFICONE makes them easy for one man to handle. These cones can be dropped from a moving truck as rapidly as desired to set up lane channeling or zone barriers. IMPORTANT! BECAUSE OF A LOW CENTER OF GRAVITY, TRAFFICONES ARE NOT AFFECTED BY ORDINARY WIND CONDITIONS CREATED BY NATURE OR PASSING CARS.

Listen to what one city official has to say about the new TRAFFICONE:

"Your traffic cone is the best engineered traffic safety device I have seen yet."

TRAFFICONES ARE NOW IN USE IN THE FOLLOWING MAJOR CITIES . . . Los Angeles . . . Seattle . . . Chicago . . . New York . . . Pittsburgh . . . Dayton . . . Kansas City . . . Minneapolis . . . Des Moines . . Salt Lake City . . . Oklahoma City . . . Cleveland . . . Indianapolis . . . Wichita . . . Fort Worth and many others.

SEND FOR A TRIAL ORDER OF 25 TRAFFICONES TODAY. SUBMIT THEM TO THE SEVEREST TRAFFIC TESTS. YOU WILL FIND TRAFFICONES THE ANSWER TO YOUR MOST DIFFICULT TRAFFIC PROBLEMS.

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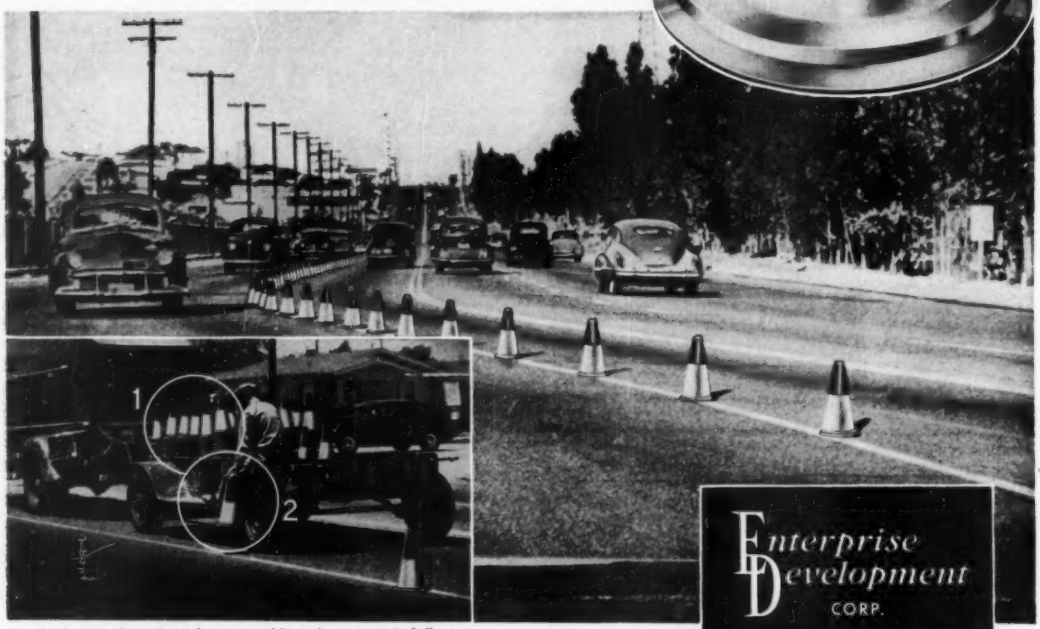

Enterprise Development CORP.

1. In "stacking," each cone adds only one inch (1").
2. Lightweight TRAFFICONES are a rapid method of erecting traffic barriers.

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Zoning and Planning Notes

Edited by NORMAN WILLIAMS, JR.

Recent Discussions of Billboard Control

A USEFUL discussion of the regulation of outdoor advertising is found in an article, "Billboards and Zoning," by Arthur H. Thompson, in the October 1948 *Traffic Quarterly*. This study contains a valuable summary of important statistical information, and an extensive treatment of the constitutional questions.

According to Mr. Thompson, billboard regulation is primarily a question for the cities, for 93% of existing billboards are located in urban areas. Nevertheless, the rural landscape has hardly been neglected—for example, a 28½-mile stretch of U. S. Route 1 between Baltimore and Washington contains 2,450 billboards and signs, by a recent count. In the section of the same road north of Philadelphia, a motorist traveling at 50 miles per hour passes one billboard per second. Moreover, most billboards are now strongly constructed of wood with a sheet-metal surface at an average cost of about $300. In view of the attention often given to farmers' interest in their income from billboards, it is a little surprising to learn that the small percentage of farmers living on main highways usually receive about $10 per year for a billboard. Yet the industry is a large-scale one, with an estimated capital investment of $125 million, a yearly volume of business of $50 million, and 33,000 employees.

Three arguments in support of billboard regulations are discussed in Mr. Thompson's article. Since the only purpose of a successful billboard is to attract attention, the safety factor along the highways is obvious, and of some real importance. Second, with the increasing development of the tourist industry, the protection of the view from rural highways has become a major factor in maintaining one of the more important industries in several states—and so, ironically, the much-scorned esthetic factor has indirectly become a matter of great economic importance. Third, the appalling ribbon slums—the continuous line of gas stations, lunch rooms and bars, cheap retail stores, and billboards, which disgrace so many of our older main highways—are encouraged by the existence of billboards, and the resulting decline of property values is likewise a matter of public concern.

Suggestions Made by Albert S. Bard

The possibilities for eliminating billboards from business as well as residential districts, and for preferential treatment of ordinary store signs, have been called to public attention recently by Albert S. Bard, of New York, an authority on billboard law. Mr. Bard published an editorial on the subject in the September issue of the *Zoning Bulletin* of the Regional Plan Association of New York, and the *New York Herald Tribune* followed this up with an editorial on October 1.

As Mr. Bard pointed out, billboards are an essentially cheap and ugly type of land use, often leading to blight. Since signs compete for attention, the existence of a rash of billboards in a business district is actually a disadvantage to local merchants who have small (and often more attractive) signs indicating their shops. Moreover, an overload of signs may distract motorists.

Several recent examples in the New York metropolitan area of drastic municipal zoning regulations directed against billboards were cited in the Regional Plan bulletin editorial. In Westport and Darien, Conn., billboards have been forbidden in business as well as residential districts, with some provision for non-conforming uses.* Oyster Bay, Long Island, permits billboards only in industrial districts, and there only under special safeguards.

Moreover, Mr. Bard pointed out that the distinction between signs indicating business on the premises and general outdoor advertising is embodied in the zoning regulations of New York and other cities, and has often been recognized and accepted by the courts. The advantages in convenience to both merchants and shoppers of clearing the way for local business signs is a legitimate ground for preferential zoning treatment of such signs and the esthetic advantages serve as an additional make-weight argument.

The editorial in the *Herald Tribune* commended Mr. Bard's conclusions to towns in the metropolitan area in vigorous terms:

> There is, of course, just as much reason for keeping the business and retail areas of a town free from disfiguring billboards as there is in protecting residential areas and parkways from their intrusion. It has been well said, in opposition to the erection of billboards along certain highways, that scenery is a national heritage and should be saved from defacement. By the same token, there is, we think, a certain inheritance of beauty, or at least of order and good looks, in the retail sections of many a town—particularly older ones—which need preserving.

* Both the prohibition of billboards in business districts, and the distinction between these and ordinary business signs, have been upheld in court—particularly in the great case involving the Westport ordinance, *Murphy, Inc.* v. *Westport*, 131 Connecticut 292, 40 Atlantic (2d) 177, 156 A. L. R. 568 (1944). See, however, the discussion on this page of the aberrational recent New Jersey case.

For a recent comprehensive state survey of Billboard Control needs see *The Roadside Bulletin*, September 1948, entitled "The Highways of Arizona Need Protection—Where Can They Find It?" The illustrated, 28-page bulletin is published by the National Roadside Council, 119 E. 19th St., New York 3, N. Y.

Exclusion of Billboards From Business Districts

NEW JERSEY. *United Advertising Corporation* v. *Board of Adjustment of Township of Maplewood*, 136 New Jersey Law 336, 56 Atlantic (2d) 406 (New Jersey Supreme Court, December 30, 1947).

A corner lot situated on a main business avenue in the outskirts of Maplewood, N. J., was purchased by the advertising company in 1933, but apparently no use was made of the land for 15 years. The zoning ordinance passed by Maplewood in 1934 contained a fairly common type of regulation, by which advertising signs were excluded from the business zone (including these premises)—except for certain types of business signs, accessory to the normal use of a building. When in 1947 the advertising company sought permission to erect two billboards on this lot, each 11 by 25 feet, the Building Inspector naturally refused to grant a permit; and his decision was upheld by the Board of Adjustment. In their appeal to the courts, the advertising company advanced some rather unusual points in support of their argument that this refusal to grant a variance constituted "unnecessary hardship"; that they had no other use for this land, and no need for a building; that a number of business establishments and one non-conforming advertising sign existed in the vicinity; and, of course, that outdoor advertising is a recognized business without objectionable features. In reply, the attorneys for the municipality emphasized the distracting effect of billboards on motorists, the possibilities for accumulating of debris in the vicinity, their generally blighting effect, and the other traditional arguments. It appeared that, while 27 billboards were in existence in the Township as non-conforming uses, none of these (with a single exception) has been erected since the zoning ordinance. The New Jersey Supreme Court found unnecessary hardship and so reversed the Board of Adjustment.

The opinion made no attempt to provide the usual justification for a finding of unnecessary hardship, by showing the existence of unique circumstances. And, since the emphasis was placed on the existing business establishments and the non-conforming advertisements, the decision must be interpreted as a holding that any prohibition of billboards in a business district is unconsitutional. The argument can hardly be said to go beyond a statement that, in the opinion of the judges—as contrasted with that of the Maplewood officials—the restriction of billboards bears no relationship to the public welfare. The opinion did, however—like most decisions declaring that something is unconstitutional—contain a fine restatement of the presumption which favors upholding the constitutionality of laws.

This opinion should not disturb munici-

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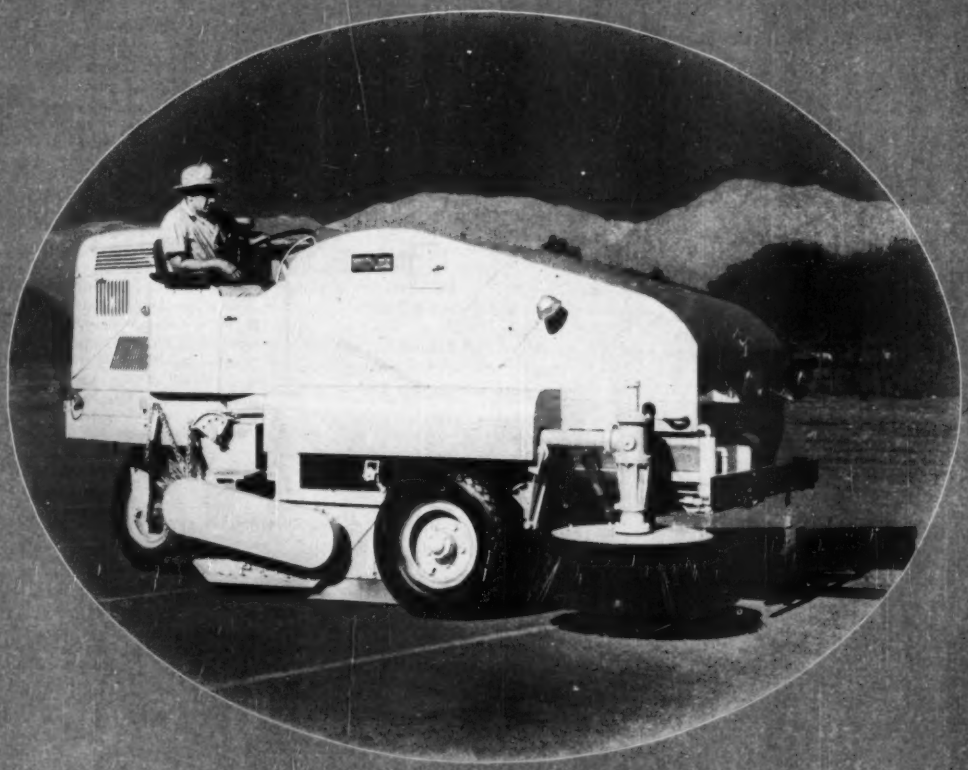

Good public health begins with good clean streets. The WAYNE way is the sure way of providing your community with good health, comfort and safety. Watch the WAYNE work . . . it sweeps . . . it cleans . . . it picks-up better than anything you ever saw . . . and you won't have to worry about part replacement, because, with a Ford Model V8 Truck Engine, parts are on hand just about every place.

What's more, you won't have to wait for the WAYNE, it's ready for immediate delivery, because it's made by skilled workmen in a fine new California plant equipped to meet increased nation-wide demand for the California WAYNE MOTOR SWEEPER. Make 1949 a year to remember, give your streets the same clean *Wayne-swept* look that has given California streets their enviable reputation.

Write for "A Clean Sweep," fully descriptive booklet telling all the facts about the WAYNE MOTOR SWEEPER.

WAYNE MANUFACTURING CO. *Motor Sweepers • Air-Cooled Engines • Motor Scooters*
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pal officials interested in prohibiting billboards in business areas, except possibly in New Jersey. In a long series of cases the constitutional and legal bases for regulation and restriction of outdoor advertising have been thoroughly established in this country. See, for example, *General Outdoor Advertising Co.* v. *Department of Public Works*, 298 Massachusetts 149, 193 North Eastern 799 (1935); *Kelbro, Inc.* v. *Myrick*, 113 Vermont 64, 30 Atlantic (2d) 527 (1943); *Murphy, Inc.* v. *Westport*, 131 Connecticut 292, 40 Atlantic (2d) 177, 156 A. L. R. 568 (1944). Moreover, in one of these leading cases (the *Westport* case), both the exclusion of billboards from business districts and the distinction between billboards and business signs were specifically upheld. The present opinion contains no indication of even a speaking acquaintance with the general body of American law on this subject, simply because it is obviously another of those New Jersey decisions. While it is possible that the judicial reorganization under the new New Jersey constitution, and the resulting changes in personnel in the higher New Jersey courts, will result in bringing New Jersey into line with the rest of the states on zoning matters, this cannot be ascertained until zoning opinions start coming down in quantity from the new courts.

CASE PROVIDES PERSPECTIVE

However, an aberrational decision often provides perspective on an important point, otherwise easily forgotten. So, in this instance, as long as the old saying that "Zoning cannot protect the esthetic" is recognized, there is no reason for surprise at decisions like the present one. Obviously the *primary* reason for anti-billboard legislation is in fact esthetic; yet, for obvious tactical reasons, in constitutional tests other arguments must be emphasized. While some of these others have substance, particularly with reference to the potential spread of blight, others really amount to legal fictions. So, when one is forced (as here) to argue that a municipality has power to restrict billboards in part because behind them immoral acts may be committed and criminals may hide, it is no wonder if courts strongly prejudiced in favor of traditional "property rights" should remain unimpressed.

Enlargement of Beach House In Residential Summer Colony

NEW JERSEY. *National House and Farms Association* v. *Board of Adjustment of Borough of Oakland*, 61 Atlantic (2d) 55 (New Jersey Supreme Court, September 2, 1948).

A 700-acre tract about a mile outside the village of Oakland in the northern New Jersey mountains has been developed since 1937 as a self-contained residential summer colony. A private bathing beach was built along a lake for the exclusive use of the property owners, with a small bath house. In 1947 the developer proposed to enlarge that beach house, in order to provide dressing rooms, storage space, and a sun deck with a soft-drink stand. Local public opinion was strongly in favor of the proposed extension. Since the whole project was situated in the "Primary Residence District," the building inspector denied a permit for these additions; and the Board of Adjustment refused a variance on the ground that there was no unnecessary hardship, with a suggestion that the enlargement would depreciate the value of the existing properties.

In the opinion the Court pointed out that the proposed enlargement was a natural part of the summer colony's development, and that it was difficult to see why an enlargement of the character proposed would be inconsistent with the surroundings.

Garden Apartments—Variances

NEW JERSEY. *Kindergan* v. *Board of Adjustment of Borough of River Edge*, 137 New Jersey Law 296, 59 Atlantic (2d) 857 (New Jersey Court of Errors and Appeals, May 27, 1948).

NEW JERSEY. *Spring Brook Gardens, Inc.* v. *Board of Adjustment of Springfield Township*, 60 Atlantic (2d) 288 (New Jersey Supreme Court, July 15, 1948).

In 1943, after a study by the local Planning Board, an amendment to the River Edge zoning ordinance assigned one section of that borough for development by garden apartments. In the present case a developer proposed to build garden apartments in another part of the town, on a tract about 200 by 200 feet in size and half zoned for one-family and half for apartment development. A variance was therefore sought to permit such construction on the one-family half. The Board of Adjustment turned down the application on the ground that no unnecessary hardship was involved, but on certiorari the lower court felt that this refusal of the variance was unreasonable and so reversed. This decision was in turn unanimously reversed by the highest New Jersey Court.

In the opinion the New Jersey Court pointed out that there was no real evidence of unnecessary hardship in this case, especially since the developer bought the land with knowledge of existing zoning restrictions. The Court also made the obvious point that the existence of a zoning boundary in the middle of a tract did not constitute sufficient reason for the grant of a variance.

In the Springfield case a tract (about 500 by 300 feet) in a one-family residence zone, with a generally irregular surface and a cliff in its rear section, fronted directly on a heavily-traveled highway and adjoined business uses. In certiorari proceedings brought for a variance to allow construction of garden apartments, real-estate experts for the owner testified that regular subdivision of such a tract for one-family development would be difficult, and that garden apartments would not impair the value of surrounding lands. Although neighbors raised objections to the project, they did not call any witnesses. The local Board of Adjustment recommended a variance as in the public interest, but failed to find any unnecessary hardship, and on that ground the Township Committee refused to approve the grant of a variance. However, the Court held that the property was unsaleable for one-family use, and so the Board's failure to find unnecessary hardship was found to be incorrect and arbitrary.

Variances—Finding of Unnecessary Hardship Is Jurisdictional Necessity

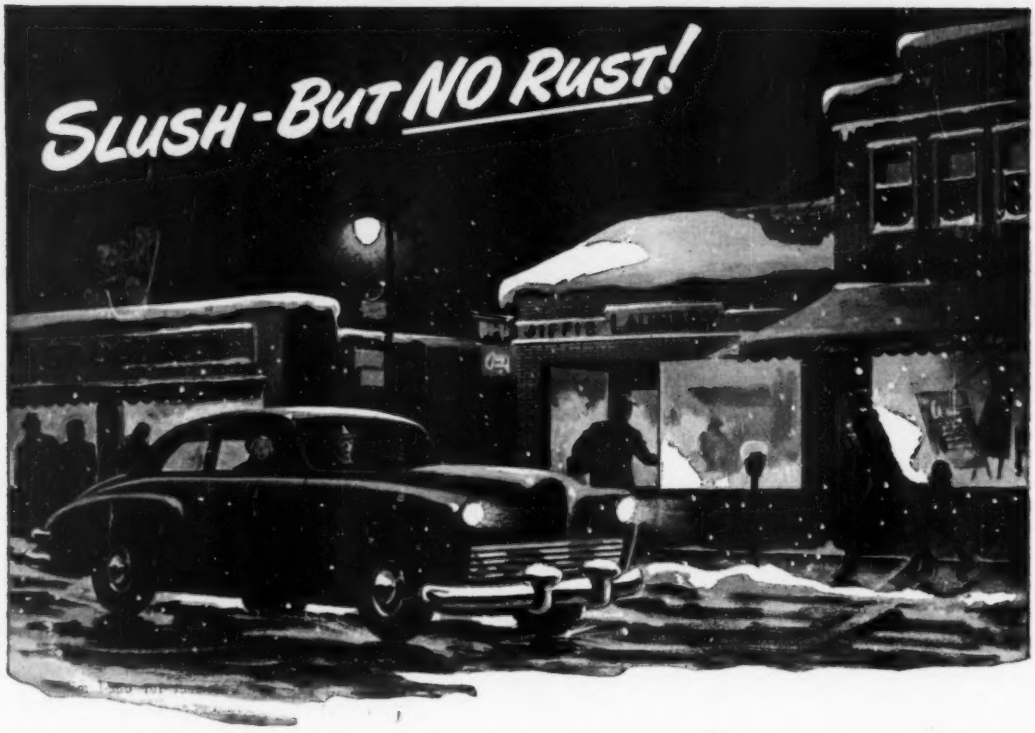
NEW JERSEY. *Protomastra* v. *Board of Adjustment of City of Hoboken*, 137 New Jersey Law 250, 59 Atlantic (2d) 644 (New Jersey Supreme Court, June 9, 1948).

In this case the grant by the Hoboken Board of Adjustment of a variance to permit a one-story supermarket in a residence zone was made without making an express finding that a denial of the variance would constitute unnecessary hardship. In the opinion, a finding of unnecessary hardship by the Board of Adjustment was described (by reference to an earlier decision) as "a jurisdictional sina qua non" in such proceedings; and in the absence of such a finding in this case, a writ of certiorari was issued to permit a review (formerly denied) of the Board of Adjustment's decision.

Zoning Techniques Handicap Modern Developments

The inadequacy of existing zoning techniques to make provision for important modern developments stands out rather baldly in the Oakland, N. J., case reported in an adjoining column. As long as development of residential areas proceeds lot by lot, the traditional system of flat inclusions and exclusions to reserve areas for exclusive residential use is a necessary and perfectly adequate arrangement for the purpose at hand—to prevent the indiscriminate scattering of small commercial buildings through the whole neighborhood. Yet for some time integrated development or redevelopment of large tracts has been becoming increasingly important; and within such areas a variety of local services must be provided. The problem is to develop zoning techniques to reserve and limit the appropriate amounts of land for local commercial and recreational uses, as an integral part of these large projects. As in this case, it is a question of normal development, not of unusual hardship arising from the peculiarities of a single piece of land; and it is rather absurd to be relegated to a choice between using spot zoning to create a tiny commercial district in the wilderness, and invoking the great sanctions of our constitutional guarantees.

N. W., Jr.



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Now, there is a way to reduce these rust headaches and at the same time keep traffic moving on ice-free streets. It's the BANOX*way!

Banox inhibits the corrosive effects of ANY slush—from pure water up to the most heavily saturated brines. It costs very little, and the savings to taxpayers and officials is measured not only in the pocketbook but on the nerves as well.

For full information, write to Calgon, Inc. Our representative will furnish samples of Banox and steel test strips for you to run your own simple, conclusive tests.

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BANOX IN BRIEF

- Works in any type of slush.
- One pound treats 100 pounds of salt or calcium chloride.
- Protection lasts through later thaws and rains.
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AN EFFECTIVE CITIZENS' COUNCIL—

What Is It? What Does It Do?

THE FACT that in many towns many important needs are going unmet would lead one to the conviction that something basic to good community life is lacking. That lack, in the opinion of James E. Greer, Executive Director of the Council for Democracy, is twofold. Discussing this subject at the National Municipal League's annual conference, in Boston, Mass., November 24, 1948, Mr. Greer pointed out: (a) that citizens are not seeing their communities whole; and (b) that not enough citizens are involved in fact-finding, planning, and action for better community living.

Discussing the kind of Citizens' Council needed to meet these two basic lacks, Mr. Greer said:

To my thinking, the Citizens' Council is a group of *effective citizens*, representative of all areas of community life. . . . It does not take the place of specialized agencies. It simply sees their relationships and fills a role no specialized agency can.

What Does It Do?

1

First of all, the Citizens' Council works out ways in which people can talk things over. It checks on all groups and organized interests with a view of using them as channels through which citizens can become informed. It offers "a speaker, a leader, a film, a chart to any group on any day at any hour on any subject." It uses radio—and imagination in its use of radio. It uses the press. It conducts leadership training classes.

In the old days a small community could talk things over at the store, the post office, and in its town meeting. For thousands of communities this is no longer possible. Times have changed. The tempo of life has changed. Ways of making a living have changed. And the need for people to talk things over has changed too. It has become more important than ever.

An uninformed people tend to become a uniformed people—the robots of statism. We will either have Citizens' Councils that make it possible for great numbers of people to talk things over and become informed, or the pressure of our industrialized way of life will squeeze the breath of life from our economic and political freedom.

2

In the second place, the Citizens' Council puts people to work for better community living. It is an opportunity-maker and it sees to it that opportunity knocks more than once at every citizen's door. It has committees whose membership is made up of people not ordinarily thought of as civic leaders—housewives, carpenters, electricians, mechanics, professional people. They are put to work where any job must start—at getting the facts. Frequently, perhaps usually, we think that getting the facts is a job for experts, researchers, specialists. Often we think they must be called in from outside. In a sense this is true. People who know what to look for and how to look for it must be involved, but the expert can organize and train lay people to help. This should be done even if it takes longer. For one thing, the facts are not just accumulated and put on a shelf. They are in peoples' minds and they get talked about. For another thing, the people who are working feel needed and important—which they should feel. Their morale rises and with that comes an increasing sense of responsibility.

People are put to work, too, in the tremendous task of *getting the facts known*. The Citizens' Council goes beyond the use of press and radio. It aids in forming discussion groups in all the natural groupings of the town—and so hundreds of other people are involved in discussing, planning and making decisions.

3

A third function of the Citizens' Council is to cultivate and develop leadership. Not so much in the sense of formal classes and courses; rather to develop it by giving opportunity to learn through experience.

4

A fourth important thing a Citizens' Council does is to lift the sights of people beyond the borders of their own town to the world community.

John W. Herring, of the New York State Education Department, said in a recent article, "The natural tendency of a community group is to contemplate its own navel. But it cannot do so in peace for there is thunder in a world that is crowding us too close. Mankind's problems no longer fall comfortably into the 'local' ones that 'we' must handle and the 'faraway' ones that 'they' must dispose of. . . . One glance at the town's honor roll tells us that practicality must have a longer reach than clearing out the village dump. . . . (In our world) they are not 'they'; they are 'we.'"

"And I would add," concluded Mr. Greer, "that 'we' are the people who must see to it that a group of effective citizens in our town band together to form a Citizens' Council whose business it is to see that government of the people and for the people continues to be government *by* the people.

Nine Promises of a Good Citizen

(A form of pledge suggested by *Printers' Ink Magazine* in cooperation with the American Heritage Foundation)

Ask yourself:

"Am I truly a citizen—or just a fortunate tenant of this great nation?

Here is a summary of the working tools of good citizenship. Pledge yourself here and now to these nine points—that you, your children, and your children's children may continue to enjoy the American Heritage of "life, liberty and the pursuit of happiness."

1. I will vote at all elections. I will inform myself on candidates and issues and will use my greatest influence to see that honest and capable officials are elected. I will accept public office when I can serve my community or my country thereby.

2. I will serve on a jury when asked.

3. I will respect and obey the laws. I will assist public officials in preventing crime and the courts in giving evidence.

4. I will pay my taxes understandingly.

5. I will work for peace but will dutifully accept my responsibilities in time of war and will respect the Flag.

6. In thought, expression, and action, at home, at school, and in all my contacts, I will avoid any group prejudice based on class, race, or religion.

7. I will support our system of free public education by doing everything I can to improve the schools in my own community.

8. I will try to make my community a better place in which to live.

9. I will practice and teach the principles of good citizenship right in my own home.

...in the "City of Angels"

LOS ANGELES, faced with the growing problem of finding enough space for those who want to work and play within its boundaries, has provided mobility for its population with the most modern traffic control system available.

Los Angeles is one of the many key cities in America which have selected, after careful comparison, MARBELITE traffic Lights and Control Systems . . . over 3,000 1-WAY Three Section Signals, and over 100 Controllers.

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Recent City Manager Appointments

BERNARD S. ALNUTT, former manager from 1931 to 1938, is back again as manager of Excelsior Springs, Mo.

C. C. CONGDON, manager of Milton, Pa., 1928-37; Shellington, Pa., 1937-40; Bellow Falls and Rockingham, Vt., 1940-46; Berkley, Mich., 1946-48, received the appointment as first manager of Hopkins, Minn.

F. R. CROMWELL succeeded E. E. BOYD at Terrell, Texas.

M. C. DAVIS succeeded NOLAN SPARKS at Panhandle, Texas.

HOWARD R. GOHLKE, of Scott Engineering Co., succeeded N. J. SMITH as manager of Rogers City, Mich.

GEORGE T. GUNDRY, former manager from 1941 to 1948, is back again as manager of Flint, Mich., succeeding F. R. BUECHNER.

BERNARD HUFFMAN is manager of Shelbyville, Tenn.

WILLIAM E. LAWSON, JR., city engineer and assistant manager at Waynesboro, Va., received the appointment at South Boston, Va.

L. W. LEIBRAND was appointed the first manager at Las Cruces, N. M.

GEORGE MARSCH, TVA., Norris, Tenn., succeeded JOHN C. FERRIS at New Smyrna Beach, Fla.

JOHN F. PORTER, Director of Public Service and Safety, Galion, Ohio, succeeded C. V. SIGNOR as manager of Grants Pass, Ore.

JAMES W. RITTER, JR., civil engineer for the Southern Railway, succeeded HUNTON TIFFANY as manager of Manassas, Va.

GEORGE J. ROARK, manager of Beaumont, Texas, 1920-23; Pensacola, Fla., 1931-37; 1940-43; 1945-47; Augusta, Ga., 1948 to date, received the appointment at Meridian, Miss.

J. C. LUCIEN TREMPE is the first manager of Ste. Agathe-des-Monts, Quebec, Canada.

IRA F. WILLARD, administrative officer, TAC, Langley Field, Va., received the appointment at Hopewell, Va.

W. T. WILLIAMSON, manager of Pampa, Texas, from 1938 to 1940; recently at Lindsay, Okla., succeeded B. H. Cruce as manager of Edinburg, Texas.

CLARENCE E. RIDLEY, *Director*
International City Managers' Association
Chicago 37, Ill.

Appointments at University of Michigan

THE College of Architecture and Design of the University of Michigan announces the appointment of Jerrold Loebl, Norman J. Schlossman, and Richard M. Bennett, of the firm of Loebl, Schlossman and Bennett, Architects, of Chicago, and K. Lomberg-Holm, Director of Research, F. W. Dodge Corporation, of New York, as visiting critics in Senior Design for the current semester.

Glendale Public Library Brings Display to City Hall

Eva Louise Robertson, Assistant to the Librarian of the Glendale Public Library, shows some exhibit material to three members of the City Clerk's Office.

MUNICIPAL officials and their staffs learned that the public library of Glendale, Calif. (1940 population, 82,582), was a convenient source for much of the information they need at a special display which was set up in the foyer of the Glendale City Hall during National Book Week, November 14-20. Part of Glendale's program to make the personnel of its municipal department acquainted with all of the city's resources and functions, the display featured government publications.

During the exhibit a librarian was on duty at all times to answer questions, and to urge interested visitors to use the complete collection at the Main Library, a few blocks away. The librarians also had the opportunity to talk directly with municipal officials, and to find out the types of information most in demand. City Manager Charles C. McCall gave enthusiastic support to the project and urged that all employees see it.

The display featured three easelboards showing dark blue outlines of the city, nation, and state, with superimposed white-spatter silhouettes of the City Hall, and the Federal and State Capitol Buildings. A poster describing "Where to Find Facts on Federal Bills and Laws" was also included.

On the red-paper-covered table was spread a selection of government publications from the Public Library. In front of the City Government panel were reports from Glendale city departments, together with publications from other municipalties.

The Federal Government section included copies of the *Congressional Record*, the *Monthly Bulletin of Government Publications*, the *Federal Register*, and other directories, special reports, and department publications.

The State Government section included the roster of California officials and a copy of the budget, building code, and other documents.

Glendale is planning a series of forums for open discussion of current civic problems between city officials and "John Public." Through such a scheme, both administrators and citizens will be aware of each other's views on many local issues.

Earlier in the year, a series of articles appeared weekly in the *Glendale News Press*, which gave a lively description of the history and work of each city department.

Leaf-Gathering

(*Continued from Page* 108)

the curb to get the heavy winter accumulation of dirt, and then following with the sweeper. The Scoopmobile then picks up the dirt piled up by the sweeper.

The Scoopmobile is also used to unload cast iron water pipe and large tile for the Water Department, to load gravel out of stock piles, and to transport the pushblade or loading bucket for the TD-9 Caterpillar tractor.

"It is a very valuable piece of equipment in loading snow out of small parking lots and around intersections of paved streets," he reported, "and in this operation we clean the snow off the catch basin after the plows have opened the streets both ways. It is the most all-around piece of equipment that we have ever used."

The SPHERE of SAFETY

GLOWING

10 GROWING YEARS

In a decade of leading the field in reflective marking materials, Prismo application has spread from roadside aids and centerlines to include extensive use on motor transportation, railroads and airports.

Now on roads, on trains and on airfields all over the world, Prismo shows the way to greater safety!

The glowing success of Prismo has a brilliant future in the hands of modern engineers. Keep *your* eye on Prismo . . . "The Sphere of Safety."

PRISMO SAFETY CORPORATION
HUNTINGDON, PENNA.

Controlled Motorists Crash Less

Uniform traffic-control devices lessen the puzzles of driving and walking

MANUAL on Uniform Traffic-Control Devices for Streets and Highways, 1948 revision, is now being distributed. It is an event. Issued first in 1935 and again as a war emergency edition in 1942, it is hoped that the present manual will become the basis for the state manuals, and the bible of traffic authorities nationally.

An example of the numerous improvements over previous editions is what amounts to a single standard for no-passing zone markings, agreed upon this year for the first time by sponsoring organizations. Continued use of a wide variety of different markings in the centers of highways to indicate when sight distance is too short for safe passing is not only confusing and irritating but decidedly hazardous. Adoption of the new standard, illustrated on page 83 of the manual, would do a lot to make highway travel safer and more pleasant. True, the no-passing solid barrier line can be either yellow or white, whereas some would have preferred not even to permit that choice. The motorist will learn, however, that he should never cross a solid line on his side of the center line and the color of that solid barrier line will come to have less and less meaning. Eventually, it is expected that one color will be used for all lane and center-line markings, as that will be entirely satisfactory, yet less expensive than the use of the two.

Groping for Unquestionable Meanings

The difficulty of obtaining universal acceptance of symbols is a measure of the difficulty which traffic specialists encounter among themselves in trying to arrive at basic indications. The controversy over the color of paint is comparable to the argument over the shape of signs. To the layman, that is to everyone except enthusiasts of the various controversial schools, a sign means what it *says*.

Nevertheless, from the earliest attempts at sign standardization it has seemed desirable that the shape of the sign have some general meaning in addition to the more specific significance designated by symbols (such as the curved arrow), letters, or by words. The octagonal "Stop" sign and the round railroad warning sign are familiar examples. However, the difference between the square and so-called diamond-shaped signs was never too clear. (The diamond is really a square with two corners pointing up and down.) Hence, in the new manual it is recommended that the diamond-shaped warning sign be used in all cases where it had been used before, and that in addition it replace the square sign.

The relatively high night accident rate in terms of miles of travel emphasizes the need for making all traffic-control devices as effective as possible after dark. In every section of the manual dealing with islands, signs and markings, high-visibility treatment is recommended. Examples include reflectorized or illuminated signs, especially illuminated loading-island approaches, and the use of alternate dark and light reflectorized stripes on protective buffers an special high-visibility marking of obstructions in or near the roadway.

Roadside delineators, which are reflecting devices mounted on posts about 3½ feet high at the side of the roadway to indicate the alignment of the roadway, are recommended. The new manual recognizes the need for such devices, particularly where there is a lot of night traffic but where conditions do not justify highway lighting, and includes specific guides for their use, including proper spacing along the roadway. They are thus defined: delineators shall consist of reflector units mounted on suitable supports, the units being capable of reflecting light of the same color as that of the source, and being clearly visible under normal atmospheric conditions from a distance of 1,000 feet when illuminated by the upper beam of standard automobile headlamps. The heads or reflector units shall be not more than 3 inches wide and 10 inches high, nor less than 2 inches wide and 6 inches high. The reflectorizing elements or surface may consist of glass or plastic buttons, a glass-bead reflecting coating, or other suitable reflecting material.

The most common method of applying pavement, curb, and object markings is by means of paint. A continuous improvement in paints, equipment, and methods of application has resulted in a very wide use of pavement markings. Equipment is in use that is capable of placing single, double, or triple striping on a highway, in different colors, of solid or broken type of line, while operating at a speed of 10 to 15 miles per hour. Hand equipment can be used to place transverse or special markings, at intersections or elsewhere, at a reasonable cost.

Pavement Markings

A relatively recent development in pavement markings is the use of minute glass "beads" (actually true spheres) embedded in the pavement-marking material to produce a reflecting surface. The glass-beaded surface returns a greatly increased proportion of the light back in the direction of its source, and causes the markings to appear luminous at night under normal head-lighting. While the beads have little or no effect in the daytime, the visibility of the markings by night is greatly improved. Although the initial cost of such reflectorized markings is considerably higher than for ordinary traffic paint, a number of highway departments have reported that the increased life of the markings, especially at heavily-traveled locations, more than compensates for the difference in cost.

Pavement markings may also be in the form of small units of metal or other material attached to or set into the pavement surface. Such units may be rectangular, round, or of special shape, and may be assembled into solid or broken lines.

Unit letters, symbols, or stripes may be attached to or set into the pavement surface, as an alternative type of pavement marking. These should be essentially flush with the pavement surface, and should not become unduly slippery when wet, especially if they are of considerable area. They should be of permanent colors, as specified for pavement markings.

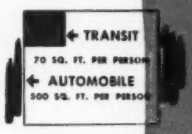
Metal and plastic inserts and flat

LOOK WHAT YOU GET WHEN YOUR TRANSIT COMPANY PROSPERS

BETTER SERVICE When the transit company in your city is making money, a big chunk of its profits goes into buying modern vehicles. Then your taxpayers benefit by getting to their destinations faster, in greater comfort.

MORE RIDING The improved service means that people can be persuaded to ride by public transit instead of automobile. And that's important . . .

LESS TRAFFIC CONGESTION Every time a person uses transit in preference to automobile, he frees 430 square feet of street space. That's why a high transit riding habit speeds all traffic and makes a big dent in traffic congestion.



STIMULATED INDUSTRY Fewer traffic jams encourage local industry to expand within taxable areas, reducing the dangers of decentralization. A good traffic flow also attracts new industry.

MORE JOBS With industrial expansion come greater opportunities for workers. As they prosper, so prosper your city's merchants and service industries.

STILL BETTER SERVICE As the improved service makes office, home, and store more accessible, more and more people can be persuaded to ride by transit. The result: a continuing cycle of better service, better traffic flow, stimulated industry, and more jobs.

Apparatus Dept., General Electric Company, Schenectady 5, N. Y.

TROLLEY COACHES MAKE MONEY FOR TRANSIT COMPANIES

GENERAL ELECTRIC

marker units in or on the pavement surface are used principally in urban areas, where heavy traffic rapidly destroys painted markings, and where frequent repainting not only is costly but causes undue traffic delays.

The marking of parking space limits on city streets tends to prevent encroachment on fire hydrant zones, bus stops, loading zones, approaches to corners, and clearance spaces for islands. Such parking space limits may be indicated on the pavement by lines marked perpendicular to the curb, and extended into the roadway the width required by a parked vehicle, usually 7 feet. As a further refinement, a line may be placed parallel to the curb connecting the street ends to these perpendicular lines, indicating the outside boundary of the parking zone. The zone may be divided into stalls by the use of lines perpendicular to the curb and so spaced that each stall is long enough to accommodate one parked vehicle. In this case a short line, parallel to the curb may be placed at the end of each stall line, in place of the continuous line extending the length of the parking zone. The marking of stalls is especially beneficial where parking meters are used.

Safe use of loading islands for public transit riders has received increased attention in the new manual, particularly in the manner of marking the approach ends of them. The idea of roughening or otherwise treating roadway surfaces to provide audible warning of an approaching hazard is getting increased attention. The "jiggle bars" cause the tires to make a "plop-plop" sound which, unmistakably, warns the driver that he is "over too far."

Traffic Signals

Because of the increasing range of traffic circulation, it is of primary importance that there be national standardization of those features of traffic signals that affect public participation in traffic movement. Design, application, location, and operation all lend themselves to a certain degree of standardization, and standards for such features are presented in the manual. The increasing use of and need for train-approach signals and automatic gates at railroad grade crossings calls particular attention to this type of equipment.

In the classification of traffic signals that follows, the distinction is made on the basis of operating function and not the traffic-signal unit itself. It is common practice to use the term "signal" to describe the complete installation. Highway traffic signals are classified as follows:

1. Traffic-control signals (Stop-and-Go)
   (a) Fixer-time signals (secs. 205-232)
   (b) Traffic-actuated signals (secs. 233-268)
      (1) Full traffic-actuated signals
      (2) Semi-traffic-actuated signals
      (3) Speed-control signals
2. Special pedestrian signals (secs. 269-276)
3. Other special traffic signals:
   (a) Flashing beacons and signals (secs. 278-283)
   (b) Lane-direction traffic signals (secs. 284-289)
   (c) Traffic signals at drawbridges (secs. 290-294)
4. Train-approach signals and gates (secs. 295-311)
   (a) Flashing light and wigwag signals
   (b) Automatic crossing gates.

Traffic control equipment should always be purchased with the future in mind. Flexibility, which may not immediately be considered necessary, will often be found desirable within the life of the equipment. Equipment that will give long effective life will almost always prove an economy, even if the first cost is moderately higher than that of equipment of inferior quality.

In the manual the engineer is held responsible for a study of the visibility conditions on each intersection approach, and the subsequent positioning of a signal indication conspicuously with the normal line of view of drivers and pedestrians using the intersection.

The trend toward the use of signals suspended directly over the traveled way, either on mast-arms or on a span-wire, has been increasing in recent years. A factor contributing toward more frequent use of over-the-roadway signals is the growth in brilliance and color of illuminated advertising signs in shopping areas.

Cycle Lengths

In the simple progressive system, a common cycle length is used at each intersection and "Go" indications are given independently in accordance with a timing schedule designed to permit continuous or nearly continuous movement of groups of vehicles along the highway at a planned rate of speed.

If a master controller is used and connected to a circuit which runs to all signal controllers in the system, there can be a constant supervision of the time relation between successive signal indications, and timers can be required to keep in step. Flashing signal operations can be obtained at any or all intersections, either by local time switch if non-interconnected, or from the master controller if interconnected.

A common cycle length is used throughout, but "Go" intervals are scheduled independently to meet to the extent possible the demands of traffic for movement through the system as well as at individual intersections. Through the use of modern two- and three-dial equipment, timing adjustments to meet efficiently widely varying needs of traffic at individual intersections and throughout the system are possible. Predetermined timing programs can be set up on the multi-dial controllers to favor rush-hour movements at appropriate periods during the day or week, midday or off-peak traffic demands, and other conditions requiring special timing schedules and coordination. Such refinements offer great advantages over the unchanging timing plans of earlier progressive signal systems. Careful measure of the demands of traffic, and of the potential value of the flexibility features in the multi-dial systems should be made before acquiring control equipment for use in flexible progressive systems.

The Manual on Uniform Traffic-Control Devices of Streets and Highways was prepared by representatives of both governmental and non-governmental organizations interested in highway transportation, and has been approved by the American Standards Association as an American standard. It is for sale for 50 cents by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. A copy should be in the hands of every official responsible and active in the traffic field.

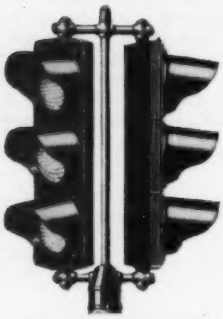
Parking Meters in Boston

To the Editor of THE AMERICAN CITY:

Metered parking in Boston, Mass., has proved even more satisfactory than was anticipated when 3,000 meters were installed in the downtown and outlying areas of the city. No better proof of this can be given than that an additional 2,000 were purchased on

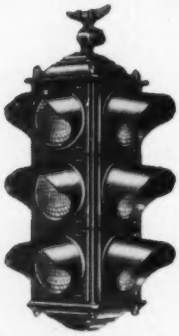
One of Boston's new Mi-Co meters.

CROUSE-HINDS
Traffic Signals and Controllers
..... a type for every purpose



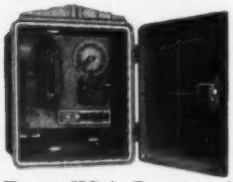
Type TRP-223D

Two-way, Three-section Adjustable Signal For Post Top Mounting



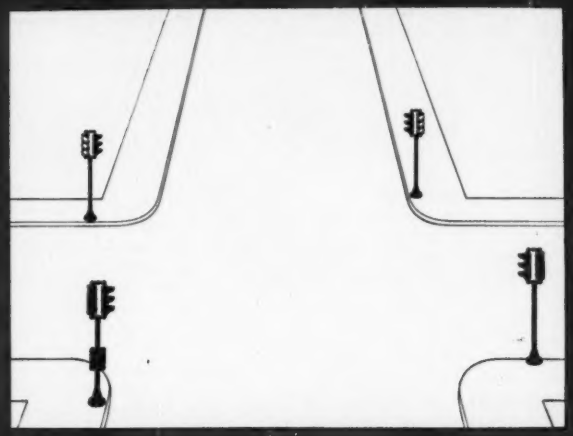
Type TSW-443D

Four-way Three-section Non-Adjustable Signal For Mounting on a Span Wire

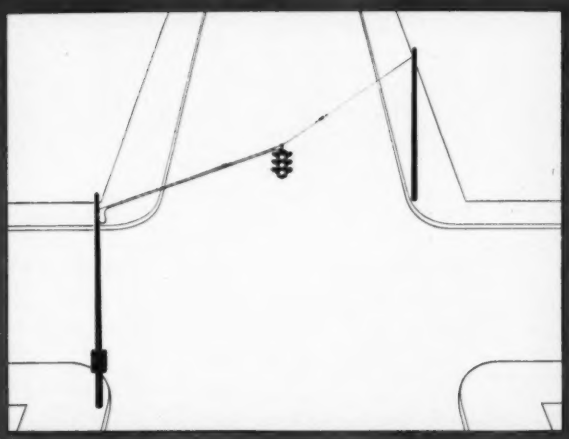


Type KS-1 Automatic Synchronous Controller

Six Signal Circuits — 4 to 16 Intervals



Typical Installation of TRP-223D Two-way Post Mounted Signal



Typical Installation of TSW-443D Span-Wire Signal

Crouse-Hinds Catalog 226 lists a complete line of traffic signals, beacons, flashers, and a series of controllers designed to help you solve your traffic control problems ... from simple installations up to the most complex heavy traffic problem. Send for your copy.

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TRAFFIC SIGNALS · CONDULETS · FLOODLIGHTS · AIRPORT LIGHTING

September 24 by the full Board of the Boston Traffic Commission.

The Board consists of the Commissioners of Police, Park, Streets, Public Works, and Traffic. Two weeks before, it was voted unanimously to purchase manually operated meters only. Next, it was voted unanimously to authorize the Boston Traffic Commission to enter into contract with Mi-Co Meters, Division of Michaels Art Bronze Co., Covington, Ky., to acquire 2,000 Mi-Co Meters.

Plans now call for the installation of 1,300 of the new meters on streets in the central business district, and 700 in the vicinity of Kenmore Square. All these streets previously permitted two-hour parking and so do the meters—for ten cents. They are operative from 8 a.m. to 6 p.m., except Sundays and holidays. During the past four months 3,000 Mi-Co and Dual Meters in the downtown and outlying areas collected $81,388.80, or 30 cents a meter per meter day.

This record of collections shows a considerably larger turnover of cars in metered areas. In downtown Boston the former parking regulations are being maintained, but we are looking quite justifiably for a faster turnover of cars here also.

LEO F. CURLEY
Traffic Commissioner
Boston, Mass.

Three-Wheel Motorcycles Replace Chicago's Police Horses

By JOHN C. PRENDERGAST
Commissioner of Police
Chicago Police Department
Chicago, Ill.

THE Chicago Police Department recently reorganized and expanded its traffic bureau in an effort to reduce traffic accidents, which claimed 508 lives and caused injury to 22,000 persons in 1947.

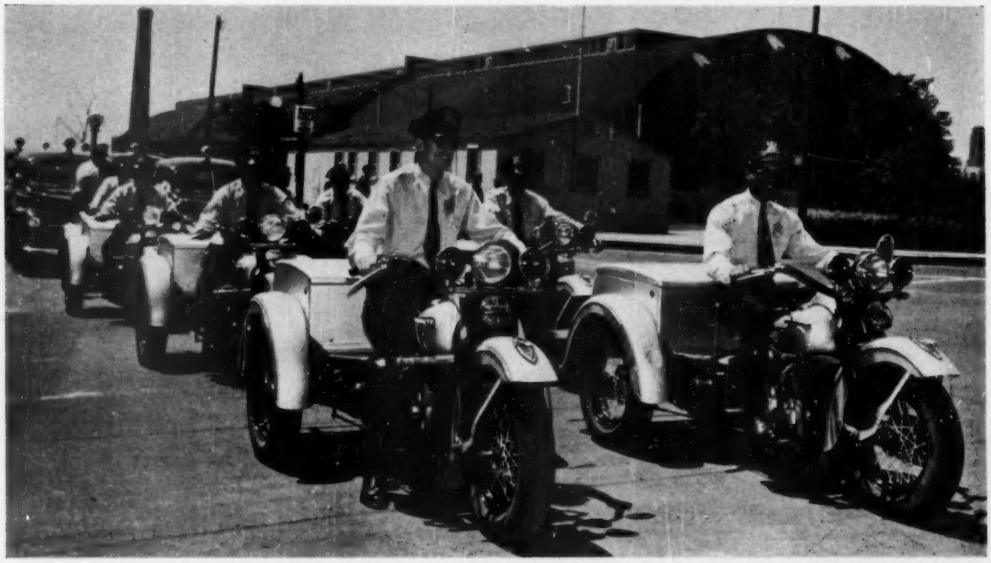
The city's traffic-safety program, inaugurated on July 1, 1948, now has received its full complement of men and motorized equipment. Formerly consisting of 547 men, the personnel has been increased to 1,212 traffic officers and additional accident-investigation squads, and solo motorcycles have been provided. Three-wheel motorcycles and enforcement coupes have also been employed for the first time in the Department.

Three motorized divisions have been organized under the traffic bureau to cope with the city's accident rate. The motorized equipment and the necessary personnel to man this equipment have been divided into the accident investigation, enforcement, and parking and intersectional control divisions.

Fifty-seven cars have been assigned to the accident-investigation division, which formerly had but 12 cars and investigated only personal-injury and fatal accident. It now has sufficient equipment to investigate every traffic accident. These investigation units carry a camera and necessary accessories, standard first-aid kits, steel tapes to measure skid marks, blankets, flares, and fire extinguishers. Personnel, expertly trained to investigate and find the causes of accidents, will endeavor to arrest and secure convictions of drivers who are involved in accidents caused by violations of traffic laws. Drivers involved in many accidents were formerly allowed to settle their cases through civil courts without interference from the police, unless complaints were signed by either or both drivers involved.

The enforcement division is primarily concerned with violations which are committed while vehicles are in operation. In order to enforce traffic rules and regulations, this new motorized division has been created. A total of 50 enforcement cars and 150 solo motorcycles with trained traffic personnel are directing their efforts more selectively toward violations causing accidents.

Through the compilation and analysis of accident reports by the traffic bureau's Records and Analysis Office, line posts have been planned and solo motorcycles in sufficient numbers have been assigned to cover all main traffic arteries and high-accident streets during the peak accident periods from 2 to



Start of the Chicago Police Department's "Parade of Equipment." One hundred and eight pieces of the rolling equipment were Harley-Davidson police solo motorcycles and three-wheeled Servi-Cars.

If your city is not metered...

or if your present meters are obsolete...

or if your traffic flow needs greater guidance...

Ask to see these valuable

CONTROL DEVICES

MILLER
The parking meter that is first choice all over America.
AUTOMATON
The amazing new parking meter that actually winds itself.
SCHOOL
ZONE
Duncan Safety FLASHERS
The all-electric traffic sign that commands greater attention and obedience.

Here are traffic control devices that set the pace others follow. Write today for illustrated catalog and details on how easily they can be purchased.

DUNCAN METER CORPORATION

835 No. Wood Street, Chicago 22, Illinois

When writing Duncan Meter Corp., please mention THE AMERICAN CITY

10 p. m., when 52% of the accidents occur. The solo motorcycles, suited to enforcement work, have been equipped with radio receivers which greatly increase their usefulness in crime prevention as well as traffic control. The enforcement cars, equipped with two-way radios, have also been selectively assigned to areas in which the accident rate is high and will aid in the investigation of accidents when necessary.

Three-wheel motorcycles have replaced the horse-mounted division, which was abolished in March 1948. Maintenance costs for the horse-mounted division, including salaries and forage, amounted to $59,000 per year. Three-wheel motorcycles were favored over the mounted division, formerly employed in directing traffic in the Loop area, because it is felt that mechanized equipment performs this function at less expense and with more efficiency. While the horses, maintained at a great expense, worked but six hours a day, three-wheel motorcycles, now controlling the Loop area, are capable of operating 24 hours per day.

Of the remaining 44 three-wheel motorcycles of the parking and intersectional control division, 38 are employed throughout the city in highly congested areas and heavily traveled streets in order to facilitate smoother flow of traffic and reduce accident hazards created by unsafe driving and parking practices. Equipped with two-way radios, these servi-car units, while primarily concerned with traffic problems, are highly mobile and can be concentrated in any area in a matter of minutes in the event of disorder.

Chicago's traffic-safety program, with the coordinated efforts of the reorganized traffic bureau, the municipal courts, safety committees, and the cooperation of the citizens of Chicago, is designed to reduce traffic injuries and fatalities by 40% in the first full year of operation. This will save 200 lives and injuries to 8,800 persons, as well as a comparable reduction in the direct economic loss resulting from these accidents, estimated at more than $33,000,000.

A 40% reduction in traffic accidents is not, however, the ultimate goal. Chicago again will be a contender for the grand safety award which it won in 1942 and held jointly with Cleveland in 1943. Chicago is going to be a safer city.

Bumper-Bumper Parking With 5-to 6-Foot Open Zones

To the Editor of THE AMERICAN CITY:

During the past summer, 200 Alfco Twin automatic meters were purchased to replace 400 single-space automatic meters in our Alamo Plaza area. The 400 single meters were then utilized in a less-congested fringe area.

The Twin meters have reduced the cost of management and control. The time scales and violation flags are visible from both sides of the street and in a great many cases checking officers can tab cars on both sides of the street at one time.

By removing every other meter in this area, and parking cars bumper to bumper at the Twin meters, we were able to better utilize the space between cars so that each car now has an additional clear "red-curbed" 5 feet of space in which to swing in and out of a parking lot.

This method has had a tendency to reduce traffic accidents with cars passing the metered area. San Antonio made its selection after comparing the cost of each Alfco Twin as against the cost of two other meters. We were interested also in the reduction of over-all management costs. This has been proven, as we are now in a position to compare the 200 Twins as against the operation of our other automatic meters of which we have approximately 1,500.

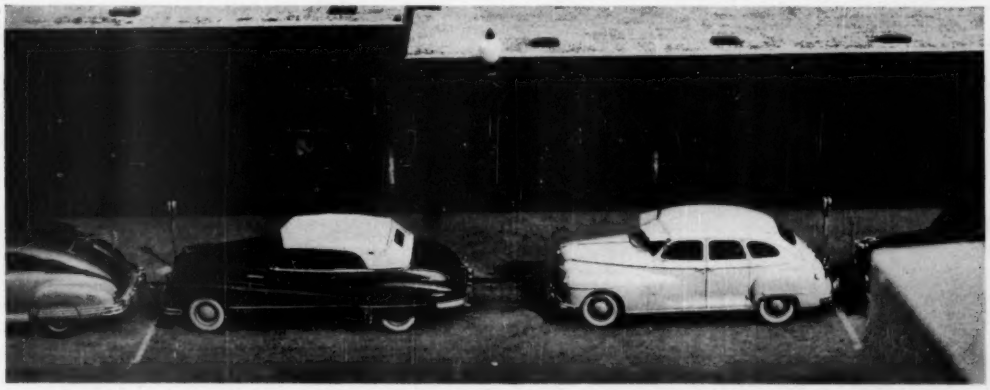
R. F. WEISS
Purchasing Agent, San Antonio, Texas

$5 For Courteous Drivers

TRAFFIC courtesy in Plymouth, Ind., was worth $5 a day not so long ago. Sponsored by various organizations in and around Plymouth, a Courtesy Week plan was drawn up in an effort to induce public interest in safety. The Chicago Motor Club set aside $35 for the campaign, one crisp new five-dollar bill to be awarded each day during the week to the most thoughtful observer of traffic courtesy and safety rules.

Representatives concerned with town welfare and safety acted as judges. Each day the committee would observe in a different part of town. Actions such as a motorist's waiting for a car to pull out of a parking space without honking or impatient language, or waiting at an intersection for pedestrians to get safely across the street before driving on, were counted as courtesies.

A young bicycle rider earned the five dollars by dismounting from his bicycle and pushing it when he reached the crowded districts of town. Later, riding his bicycle along a sidewalk, he courteously came to a stop in order to let pass some less generous-minded pedestrians approaching from the opposite direction. In many cases courtesy was exhibited by certain persons for a short time, but they were not rewarded because they became impatient and counteracted their good record with unwise or uncourteous traffic behavior.



With this kind of parking (front bumper close to rear bumper of car ahead) all the cars can get out easily.

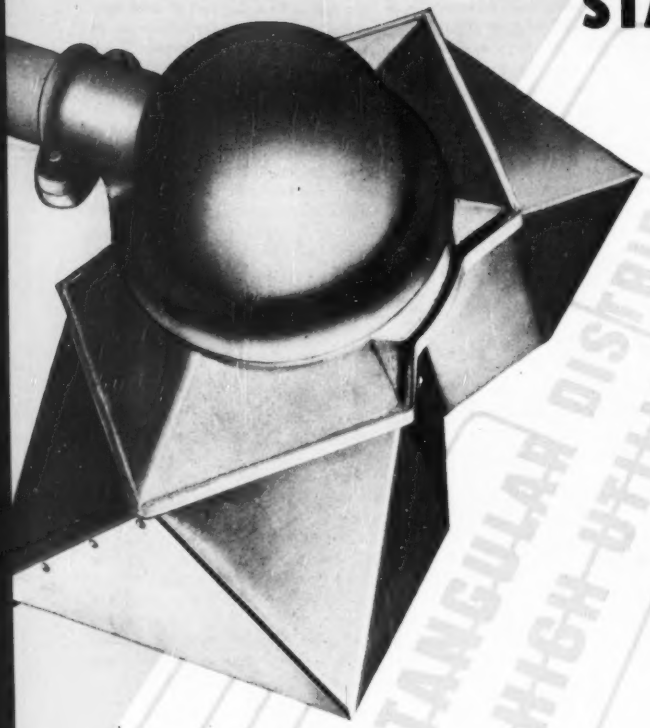
JOSLYN *presents*

PERMALUX

a new

Suburban Luminaire in

STAINLESS STEEL



RECTANGULAR DISTRIBUTION for HIGH UTILIZATION

RECTANGULAR DISTRIBUTION directs light along the street and sidewalks — giving high utilization of the source lumens.

STAINLESS-STEEL REFLECTOR with hard, highly polished specular surface provides high, permanent reflectivity — no thin film to errode or wear away.

VARIABLE CUTOFF ANGLE from 45° on the house side to 83° up and down the street provides maximum utilization with minimum glare.

ATTRACTIVE APPEARANCE — unique modern design combines high efficiency with low cost.

REFLECTOR ATTACHMENTS AVAILABLE to fit most porcelain and metal heads.

Modernize your old fashioned inefficient luminaires with the Joslyn Permalux Reflector.

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THE SOUTH EAST JOSLYN CO
SOUTHERN JOSLYN CO
JOSLYN SOUTHWEST CO
JOSLYN PACIFIC CO

JOSLYN MFG. AND SUPPLY CO.

Complete Pole Line Equipment

20 NORTH WACKER DRIVE, CHICAGO 6, ILL.

LOS ANGELES, CALIF.

Tailored Lighting at Intersections

WIPES OUT PEDESTRIAN FATALITIES

By W. E. LAUER
Street Lighting Engineer
Los Angeles, Calif.

This concrete single pendant, the post of which was manufactured and furnished by the Pacific Union Metal Company of Los Angeles, and . . .

this steel standard, furnished by the Union Metal Mfg. Company of Canton, Ohio, are mounted with luminaires at 25 feet, and have replaced . . .

LOS ANGELES has started a two-pronged offensive against night-time traffic fatalities: improvement of lighting at principal street intersections where the greatest number of such fatalities occur, and the improvement of lighting on 300 miles of arterials through congested districts.

These two programs, progressing concurrently, are aimed directly at reducing the tremendous toll of night-time pedestrian fatalities. Points of hazard are considered in order of their priority as indicated by the frequency of collisions and fatalities.

While only 171 intersections and 15 miles of arterial lighting have been improved at present, the year 1947 showed a reduction of 33% in night-time pedestrian fatalities, which is a saving of 78 lives over the previous year.

Such results, at a relatively negligible cost, are gratifying, and appear spectacular to those who are not familiar with the evolution and progress of street-lighting engineering during the past decade. In inaugurating these programs, Los Angeles has simply benefited by putting into practice the well-known and proven theory that adequate visibility can reduce night-time fatalities to a ratio approximating those sustained during daylight.

The rapid increase in the number of pedestrian fatalities at several major intersections precipitated the first improvement of lighting at intersections in 1944, either by converting the existing standards and lighting units, or by installing new equipment. The results were so startling that additional funds were appropriated each year for continuance of the program. It is significant that not one pedestrian fatality has occurred at any intersection where the illumination has been improved by this method, from the beginning of the program to date, August 15, 1948, despite the fact that such intersections were formerly among the most hazardous in the city.

this twin-light ornamental unit in Los Angeles. The lighting units on the new standards were furnished by the Westinghouse Manufacturing Corporation, Line Materials Company, and the General Electric Company. All cooperated in designing the units so that glassware is interchangeable.

During 1947, new techniques and designs were developed, whereby each

PARK-O-METER

The CONVERTIBLE Model G

Precision engineered AUTOMATIC mechanism.

Instantly convertible to CUMULATIVE TIME reset.

Modern postwar design thoroughly PROVED.

Includes ALL FEATURES sought by leading traffic engineers.

Lower OPERATING COST assured by unit-repair design.

Fully convertible to ALL street traffic CONDITIONS.

Convertible features INBUILT . . . no added parts.

Produced by the ORIGINATORS of metered parking.

AUTOMATIC in operation

ACCURATE at all times

ADJUSTABLE to meet every need

ACCEPTED in cities everywhere

A SYSTEM not just another meter

Experience in cities of every size in all sections of the country has demonstrated the value and effectiveness of Park-O-Meters in solving on-street and off-street parking problems. Ask our traffic consultant to tell you how it is done.

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PARK-O-METER COMPANY

intersection selected from the accident records is given individual treatment in accordance with the requirements, as indicated by the volume and direction of pedestrian traffic and the actual spot of the accident. The type of intersection governs the type and the intensity of the illumination. This method frequently requires that improved lights be placed in addition to the ones directly at the corners of the typical intersection, to provide silhouette lighting. These varying treatments, to meet the needs of each intersection, consist of layouts of two, four, six, eight or twelve posts.

As a result, pedestrians are clearly visible to motorists in either of the four cross-walks, both by surface lighting or in silhouette.

Obtaining Maximum Value

The first step in this program was to determine where and how the maximum benefit could be obtained from the expended dollar, considering the manpower and material shortages.

The priority of intersections to be improved was determined by the simple procedure of screening accident reports of previous years, which process eliminated all but the pedestrian fatalities which could be attributed directly to low visibility.

Fatalities for each year are indicated by pins of various colors, spotted on a wall map at the approximate locations at which the fatalities occurred. Additional pins, added as statistics, are furnished by the Police Department. Completed improvements of intersections and other general lighting are also indicated.

In this manner a complete visible record is maintained and used as a guide for both the intersection-lighting and arterial-lighting programs, and as evidence of the results being obtained by the improvements.

Shortages Delay Improvements

The continued shortage of steel, aluminum and copper has delayed the improvements of some streets with high priority, but they will receive attention when these materials are available.

These jobs represent various classes of lighting improvements, such as replacement of defective posts, modernization of existing posts, and the complete replacement of standards of hopelessly obsolete types.

Contracts have been awarded for the improvement of 35 lineal miles of streets, at a total cost of over $2,000,000.

Fortunately, the majority of the 20,000 two-light electroliers on traffic arteries can be easily converted by shaft extensions and pipe reinforcing to support single pendant units at proper mounting heights. In addition there are about 5,000 concrete and 3,000 cast iron posts which require replacement with specially designed posts of both concrete and steel.

Needless to say, all conversions and replacements are, with few exceptions, single pendant-type, using 10,000- to 15,000-lumen lamps with proper distribution according to the *Recommended Practice of Street and Highway Lighting 1945* of the Illuminating Engineering Society.

In most cases it has been possible to maintain lamp centers at 26 to 28 feet, and in some instances expensive reconstruction of pole lines for clearance has been avoided by specifying 26-foot lamp centers rather than the 28 feet recommended, and by using light alabaster diffusing globes.

Aside from the sizeable allocation of funds required for the purpose, the inability to procure materials of the kind required has been one of the many difficult problems incurred during the progress of the program. This has necessitated substitutions and compromises, and required resourcefulness.

Electrolier Requirements

The modern electrolier, while not essentially ornamental, must be well designed and pleasing to the eye. It should also be of sufficient strength to withstand more than a reasonable amount of deflection by wind or vibration, especially where arms of 6 feet or longer, with deflecting or refracting lighting units, are used.

When existing standards, equipped with upright units, are converted to a higher-mounted pendant type, any tendency toward temporary or makeshift appearance should be definitely avoided, and the finished product should have the appearance and stability of a new installation. In many instances this entails a greater expenditure, but is justified by the public's reaction and support of improved street lighting.

Ithaca's Athletic Field Halves Delinquency

By F. J. LAVERTY
Superintendent of Public Works
Ithaca, N. Y.

THE Ithaca municipal athletic field, Percy Field, was improved during the Spring of 1948. The improvements included the installation of a lighting system for night athletic events, the purchase of bleachers for 1,200 persons to increase the seating capacity to 2,000, and the fencing of the park. All of these cost $35,000.

As a result of the improvements and a subsequent increased usage, a 50% reduction in juvenile delinquency has been noted in this city of over 20,000 population during the past summer. According to the Chief of Police, the

'what's new in GE street lighting

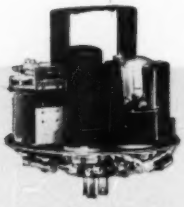
NOW! Built-in photoelectric control for individual luminaires

Here is the answer to controlling individual luminaires on a multiple street-lighting circuit! It is the new G-E Form 110 luminaire—a slip-fitter suspension-type luminaire that will take almost any G-E optical system, and that contains a built-in photoelectric relay control.

This control eliminates the need for pilot circuits or separate control devices of any type. The luminaire is wired into the power source—and the relay turns the lamp on or off according to seeing conditions. Installation time and costs are radically reduced.

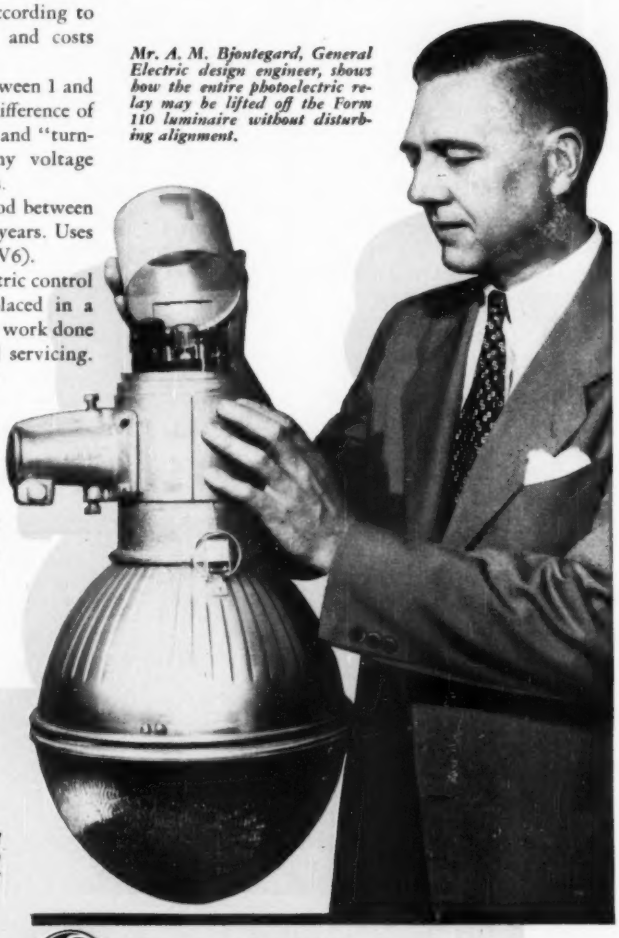
- Adjustable to operate anywhere between 1 and 6 foot-candles—with a minimum difference of 1/2 foot-candle between "turn-on" and "turn-off." Practically unaffected by any voltage variation between 105 and 130 volts.
- Tube life of several years with period between inspections recommended at 2 to 3 years. Uses standard radio tubes (6SQ7 and 6V6).
- Easily maintained. Entire photoelectric control unit plugs into hood—can be replaced in a matter of seconds, with actual repair work done in shop. No tools required for field servicing.
- Does not require resetting after power failure.
- Entire control consumes only 8 watts—and can handle lamps up to 900 watts.

For full information on this self-controlled luminaire, call our nearest office or write to *Apparatus Department, General Electric Co., Schenectady 5, New York.*



This is the complete photoelectric relay used with the Form 110 luminaire. It employs two readily available vacuum tubes and a red-sensitive photoelectric cell.

Mr. A. M. Bjontegard, General Electric design engineer, shows how the entire photoelectric relay may be lifted off the Form 110 luminaire without disturbing alignment.



GENERAL ELECTRIC

Are you tying in with the NEMA plan to give America better street lighting?

number of complaints about boys' mischief, actual cases of damage caused by boys, or complaints that boys were disturbing neighbors decreased 50%. Individual checks of some regular boy delinquents disclosed that they had not been in any trouble during the summer. All boys and girls were admitted to the park without having to pay an entrance fee.

The lighting system was designed by Crouse-Hinds of Syracuse, N. Y., and cost $15,500. The system is composed of eight units. Six of these are mounted on 70-foot poles, and each includes 12-1500-watt lamps. The other two are twenty-four 1500-watt units on 75-foot poles, one located back of first base, the other behind third.

The four units in the outfield are located on a 320-foot arc from home plate. The others are situated 50 feet from the base lines, two 30 feet from home plate and the others 140 feet from home or 50 feet from first and third (all distances at right angles). By refocusing the lights, the layout is adaptable to football. Since May the system has been in operation about 300 hours.

From a financial standpoint the venture has been an amazing success. The City has received nearly $12,000 from admissions, rentals, advertising, and concessions, which indicates an early amortization of the investment, financed from tax levy. This year 111 events have been held at the park and over 45,000 persons have paid admittance.

Special satisfaction, of course, is derived from the reduction in juvenile delinquency.

Longview, Wash., Has New Lighting System

By C. C. TIBBETTS
Mayor

THE Longview, Wash., (population 12,385 in 1940), street-lighting system in the business district was installed in 1924 while the city was being built. The street-lighting poles were of concrete, 14 feet high, with a globe that did more to retain light than to distribute it. In 1947, the City Council decided to rebuild the system and at the same time add traffic lights at the principal intersections.

The new series system comprises one hundred and thirty-two 6,000-lumen lights spaced 80 feet apart, placed opposite each other along the main business street. The lights are mounted on Union Metal Manufacturing Company round, plain-base, monotube, pendant standards having a 5-foot overhang over the street. The luminaires are Form 79R General Electric with Holophane refractors.

At principal intersections two-way three-color traffic lights are mounted on Union Metal standards with G-E manhole-type transformers in the bases. The traffic signals were manufactured by the Crouse-Hinds Company.

A fire control is located in the Fire Department at the City Hall, with a push-button station for initiating or interrupting the timing period. A master controller is located in the office of the Police Chief.

In Longview, utility poles or wires on the streets are permitted only for connecting feeder lines, the installations being in the alleys. All the new lighting system was placed underground, necessitating the removal and replacement of about two miles of sidewalks and pavement adjacent to the curb. Traffic-signal wires were placed in conduit, Flamenol 5,000-volt cable being used for street lighting. Street-lighting cable and traffic wires were placed in the same trench.

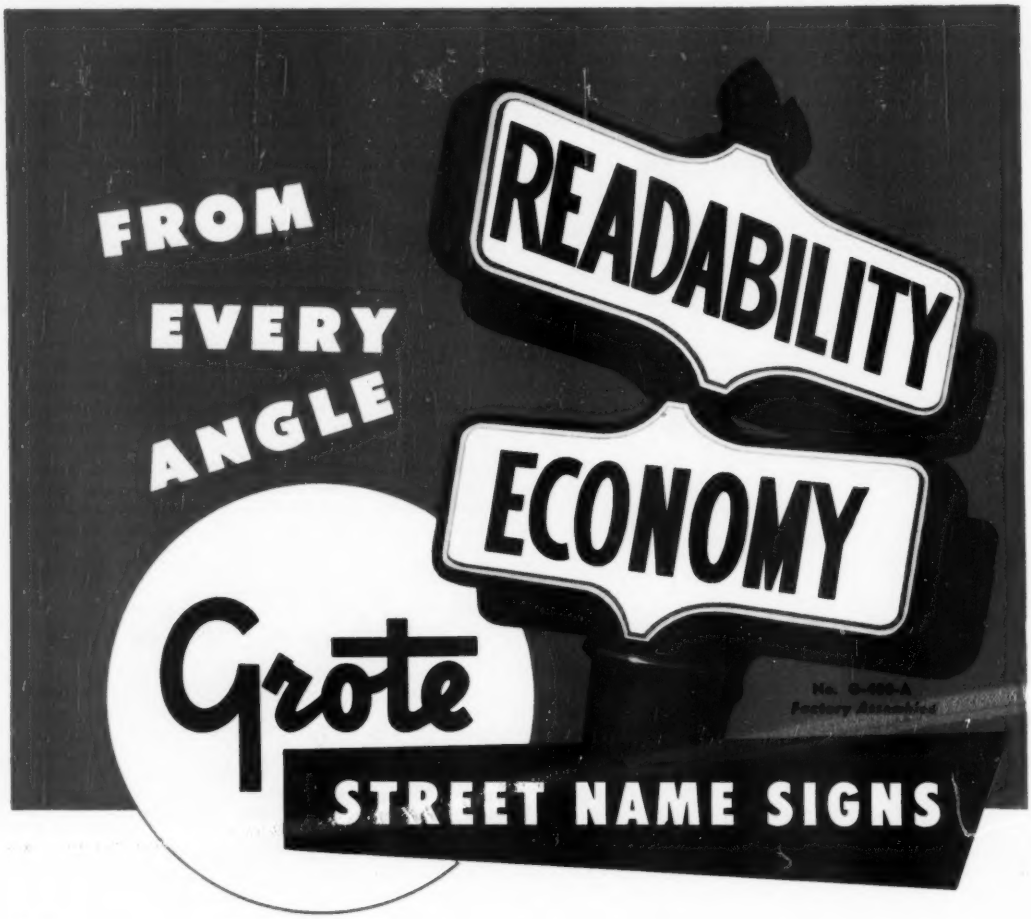
The cost of the combined system was about $48,000.

Lights on Lewiston (Idaho) Airport

THE new lighting system of the Lewiston-Nez Perce County (Idaho) airport consists of 94 runway- and 24 threshold-lamp units, together with more than five miles of inter-connecting underground cable. Each lamp unit is mounted on a concrete pad and is provided with a special mounting which, if accidentally hit by aircraft, will break at a fixed point, thus limiting the damage to the unit and virtually eliminating damage to aircraft. The entire lighting system is controlled from a panel in the administration building.

The runway markings consist of numerals 60 feet in length painted on the pavement at the ends of the runways. The numbers serve to identify the runways in ground-to-plane communications and indicate the heading of an airplane making a landing approach. As a further aid, a lighted wind cone is near the center of the landing area. The wind cone is at the center of a segmented circle which marks the location of the wind cone from the air. The segmented circle marker is made up of 20 concrete slabs 12 feet long and 4 feet wide and laid on the ground in a 100-foot diameter circle. A pilot can locate the wind cone at a glance.

New street lights on Commerce Avenue, Longview, Wash.



Enhance civic pride and improve traffic safety with easy, attractive street identification. Increase property values—inspire confidence in the accomplishments of your administration. The Grote embossed Street Name Sign is preferred for its easy readability. Resistant to severe weathering —clearly legible—Grote Street Name Signs are built for durability and far reaching economy. Grote Signs are better from every angle. Write for catalog and prices.

Grote MANUFACTURING COMPANY, INC.

Grote Square BELLEVUE, KENTUCKY Opposite Cincinnati

A Grote reflectorized sign is the Brightest Message on the Road

Conventions—When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

***Jan. 13-14—Boston, Mass.**
National Council for Community Improvement. New England Regional Conference (Hotel Statler). Exec. Sec., Barrett L. Crandall, 1760 K St., NW., Washington 6, D. C.

Jan. 16-20—Chicago, Ill.
Associated Equipment Distributors. Annual Meeting (Hotel Stevens). Exec. Sec., Frank G. Knight, 360 N. Michigan Ave., Chicago 1, Ill.

Jan. 19-21—New York, N. Y.
American Society of Civil Engineers. Annual Meeting (Hotel Commodore). Sec., William N. Carey, 33 W. 39th St., New York, N. Y.

Jan. 21-22—New York, N. Y.
New York State Sewage Works Association and American Water Works Association—New York Section. Joint Meeting (Hotel Pennsylvania). Exec. Sec., A. F. Dappert, New York State Dept. of Health, Albany, N. Y.

Jan. 24-26—Columbus, Ohio
Highway Engineering Conference. Annual Conference (Ohio State University). R. J. Lehman, Committee on Publicity, Department of Highways, Columbus 15, Ohio.

Feb. 6-10—College Station, Texas
Texas Water and Sewage Works Association. Annual Meeting (Texas A. and M. College). Sec., V. M. Ehlers, 501 W. 33rd St., Austin, Texas.

***Feb. 14-15—Detroit, Mich.**
Association of Asphalt Paving Technologists. Annual Meeting (Hotel Statler). Exec. Sec., Ward K. Parr, 1224 E. Eng. Bldg, Ann Arbor, Mich.

Feb. 17—Newark, N. J.
American Water Works Association—New Jersey Section. Luncheon Meeting (Essex House). Exec. Sec., C. B. Tygert, P. O. Box 178, Newark 1, N. J.

Feb. 28-March 3—New York, N. Y.
The Associated General Contractors of America. Annual Convention (Hotel Waldorf-Astoria). Mng. Dir., H. E. Foreman, 1227 Munsey Bldg., Washington 4, D. C.

March 1-3—Boston, Mass.
Association of Highway Officials of the North Atlantic States. Annual Meeting (Hotel Statler). Sec.-Treas., A. Lee Grover, State House Annex, Trenton, N. J.

March 10-12—Richmond, Va.
American Concrete Pipe Association. Annual Convention (Hotel John Marshall). Mng. Dir., H. F. Peckworth, 228 N. LaSalle Street, Chicago, Ill.

March 11-13—Washington, D. C
American Society for Public Administration. Annual Convention (Hotel Statler). Sec.-Treas., Laverne Burchfield, 1313 E. 60th St., Chicago, Ill.

March 15-18—Houston, Texas
The American Institute of Architects. Annual Convention (Hotel Rice). Exec. Dir., Edward C. Kemper, 1741 New York Ave, NW., Washington 6, D. C.

***March 21-23—Washington, D. C.**
United States Conference of Mayors. Annual Conference. Exec. Dir., Paul V. Betters, 730 Jackson Place, NW., Washington 6, D. C.

March 23-25—Trenton, N. J
New Jersey Sewage Works Association. Annual Meeting (Hotel Stacy-Trent). Sec.-Treas., Michael S. Kachorsky, 345 No. 8th Ave., Manville, N. J.

March 28-30—Oklahoma City, Okla.
American Planning and Civic Association. Annual Conference (Hotel Skirvin). Exec. Sec., Miss Harlean James, 901 Union Trust Bldg., Washington, D. C.

***Mar. 31-April 1—Natural Bridge, Va.**
Virginia Industrial Wastes and Sewage Works Association. Annual Meeting (Hotel Natural Bridge). Sec.-Treas., A. H. Paessler, 815 E. Franklin St., Richmond 19, Va.

***April 4-6—Washington, D. C.**
American Society of Landscape Architects. Annual Meeting (Hotel Shoreham). Corresponding Sec., Bradford Williams, 9 Park St., Boston 8, Mass.

***April 8-9—Great Falls, Mont.**
American Water Works Association—Montana Section. Annual Meeting (Civic Center). Sec., C. W. Brinck, State Board of Health, Helena, Mont.

April 20-22—Indianapolis, Ind.
American Water Works Association—Indiana Section. Annual Meeting (Hotel Lincoln). Sec.-Treas., C. H. Bechert, Room 217, Underwriters' Bldg, Indianapolis, Ind.

April 21-22—Hutchinson, Kans.
American Water Works Association—Kansas Section, and Federation of Sewage Works Associations, Kansas Section. Annual Meeting (Hotel Bisonte). Sec., Sewage Works Assn., Dwight F. Metzler, Room 2, Marvis Hall, Lawrence, Kans.

April 25-27—Quebec, Canada
American Water Works Association—Canadian Section. Annual Convention (Chateau Frontenac). Sec.-Treas., A. E. Berry, Parliament Bldgs., Toronto, Ontario, Canada.

***May 2-5—Washington, D. C.**
Chamber of Commerce of the United States. Annual Meeting (Chamber Building). Exec. Vice-Pres., Ralph Bradford, 1615 H St. NW., Washington, D. C.

***May 9-11—Detroit, Mich.**
Association of State Planning and Development Agencies. Annual Meeting (Hotel Book Cadillac). Exec. Dir., Walter H. Blucher, 1313 E. 60th St., Chicago 37, Ill.

***May 10-12—Los Angeles, Calif.**
American Public Power Association. Annual Convention (Hotel Ambassador). Gen. Mgr., Carlton L. Nau, 1757 K St., NW., Washington 6, D. C.

***May 12-14—Bellingham, Wash.**
American Water Works Association—Pacific Northwest Section. Annual Meeting (Hotel Bellingham). Exec. Sec., Fred Merryfield, Prof. San. Eng., Oregon State College, Corvallis, Ore.

***May 16-19—San Francisco, Calif.**
National Fire Protection Association. Annual Meeting (Hotel Fairmont). Gen. Mgr., Percy Bugbee, 60 Batterymarch St., Boston, Mass.

***May 23-26—Detroit, Mich.**
Municipal Finance Officers Association of the United States and Canada. Annual Meeting (Hotel Statler). Exec. Dir., Miner B. Phillipps, 1313 E. 60th St., Chicago 37, Ill.

May 30-June 3—Chicago, Ill.
American Water Works Association—National Convention. Annual Convention (Hotel Stevens). Exec. Sec., Harry E. Jordan, 500 Fifth Ave., New York, N. Y.

***June 1-3—Washington, D. C.**
President's Highway Safety Conference (Departmental Auditorium, Federal Works Bldg.). Gen. Chr., Major Gen. Philip B. Fleming, Federal Works Administrator, Washington 25, D. C.

***June 12-17—Cleveland, Ohio**
Annual Conference of Social Work. Annual Meeting (Cleveland Auditorium). Exec. Sec., Joe R. Hoffer, 82 North High St., Columbus, Ohio.

***Sept. 13-16—Dixville Notch, N. H.**
New England Water Works Association. Annual Meeting (Hotel Balsams). Sec. Richard Ellis, Associated Factory Mutual Fire Insurance Companies, 184 High St., Boston, Mass.

Up-to-the-Minute County Tax Billing

AN OUTSTANDING feature of our three-year-old machine tax-accounting and billing system for Pierce County, Wash., is the maintenance of the assessment roll in the form of individual ledger cards. Once these ledger cards are made they become a continuous record. Each card carries all charges that take place in a piece of property, and is thus a historical record as well as an active accounting record.

The valuations from these assessment cards are used in making the individual tax ledger cards which also are set up as a continuous record for a period of years. In making the bills, the bill form and the taxpayer's tax ledger card are both placed in the machine and simultaneously printed with the tax amount, the machine being set up with the current tax rate and multiplying this rate times the valuation.

The subsequent cash payments are posted to the taxpayer's tax ledger card.

We have been using this method for several years. It saves time, is more accurate, does better work and is a great savings in the county. Under this system the Treasurer's office balances to the penny with the districts.

Another reason we like our system is that each tab statement has the legal description written on it by the Addressograph machine. Some counties use tax numbers, but we believe that the taxpayer should be able to check his statement and description with his deed or contract. This assures him that he is paying on the right property.

This year we are making and mailing in the neighborhood of 90,000 real-estate statements and approximately 8,000 personal property statements. We start as soon as our budget levies are in, about the middle of October, and will have the statements and tax rolls to the Treasurer by January 15. The work is performed by three tax machines and four girls, plus the girl on the Addressograph machine. Our rolls are all balanced and certified by the County Auditor.

John Schlarb
Assessor
Pierce County, Tacoma, Wash.

All-Purpose TRAXCAVATORS Handle Complete SANITARY FILL GARBAGE DISPOSAL

From trench-digging to the finish grade, TRAXCAVATORS handle every step in the construction of Sanitary Fills for garbage disposal. Whether the area or trench method is used TRAXCAVATORS give efficient and cost saving performance.

TRAXCAVATORS' wide range of utility enables you to dig trenches, build ramps, spread refuse, compact and backfill trenches . . . spread, compact, level and grade surface areas.

When not in use on Sanitary Fill Projects TRAXCAVATORS can be kept busy repairing streets, removing snow, landscaping and doing many other jobs. Stretch your tax dollar and invest in a TRAXCAVATOR to do more jobs faster, better and cheaper than any other type of equipment. See your TRACKSON-"Caterpillar" dealer for detailed information or write to the Trackson Company, Dept. AC-19, Milwaukee 1, Wisconsin.

Municipal and Civic Publications

About Croton Reservoir

THE BIG FREEZE—*By Bellamy Partridge. Thomas Y. Crowell Co., New York.* 236 *pp.* $2.75.

Here is fiction of interest to the municipal official chiefly because it deals with the subject of New York City's old Croton aqueduct and reservoir. Engineers and other public-works men who have had the responsibility of this type of work will be impressed by the author's assigning an important project like this to the story's hero, David Wakeman, a young engineer just out of college.

Professional engineers probably will be even more impressed by the statement in the book that young David, on several occasions, gave his opinion that the reservoir he was building was not structurally sound. Nevertheless the board of non-professional men did not accept his opinion, and in spite of this he stayed on to build an unsound structure that ultimately failed at great loss of life and property. This, the story relates, proved to be a vindication of David and resulted in his elevation to higher honors.

Construction of the aqueduct is made a good deal more zestful by two beautiful young ladies, Jepsie Gibson and Araminta Jerrold, whose appearance on any heavy-construction project would lighten the hearts of the engineers. James Fenimore Cooper, William Cullen Bryant, Horace Greeley all figure in the story.

Modesto Fringe-Area Study

A STUDY OF THE FRINGE AREAS OF MODESTO, CALIF.—*By James Wilson McGrew and Arthur Bruce Winter. Dept. of Government Management, University of Denver, Denver, Colo. Sept.* 1948. 217 *pp.* $3.50.

An analysis and recommendations pertaining to the problems of the unincorporated areas surrounding the City of Modesto are contained in this unique report. Governmental services in the fringe areas are surveyed and conclusions are made about each. Sections are also devoted to alternative courses of action and the financial aspects of annexation.

The recommendations urge revision of present city annexation policies, including those on zoning restrictions and sewer extension, so that the inner fringe can consider annexing to the city. The report points out that annexing areas should be assessed at the equalized rate prevailing within the city and that there should also be revision of the present policy of extending fire-protection service to industry outside city limits. The report concludes, however, that initiation of a major annexation should not be attempted without planning a financial program at least five years in advance.

New Pipe-Friction Data

TENTATIVE STANDARD ON PIPE FRICTION—*The Hydraulic Institute,* 90 *West St., New York* 6, *N. Y.* $1.50.

A compilation of data drawing from work by Professors Lewis F. Moody and Clifford P. Kittredge of Princeton University. This represents an important step forward in this subject from the important work performed by Williams and Hazen over 40 years ago. The Standards show friction loss for pipe sizes ranging from ⅛ inch to 84 inches. In addition, there is a complete listing of losses in valves and fittings. Complete bibliography gives the source of the material used in the preparation of the Standard.

On Prestressed Concrete

BIBLIOGRAPHY ON PRESTRESSED REINFORCED CONCRETE—*Engineering Society's Library,* 29 *W. 39th St., New York* 18, *N. Y. Mimeographed.* 25 *pp.*

A list of 190 references to books and articles in publications from all over the world, covering the subject of prestressed reinforced concrete, this comprehensive bibliography covers sixty years of study in the field and includes theory, design, construction practice, and applications.

Civil Defense Report

CIVIL DEFENSE FOR NATIONAL SECURITY—*A Report to the Secretary of Defense by the Office of Civil Defense Planning.* 1948. *Charts.* 301 *pp. For sale by the Superintendent of Documents, Washington* 25, *D. C.* $1.

This report recommends for adoption a permanent peacetime system of civil defense to round out the nation's defense structure, which, in the event of an emergency, could be quickly and easily expanded to meet the exigencies of a given situation, and also be of great value in support of existing agencies in meeting devastating peacetime disasters.

The report points out that civil-defense planning has as its ultimate objective the meeting of emergencies and the solving of problems which will arise in actual operations in the local community, and that therefore proper community organization must be recognized. The report sets forth a flexible pattern that can be adapted to local needs and situations.

Though sections of the report may be considered controversial by some, municipal officials and department heads should make every effort to examine and study the carefully evolved recommendations so that they will be aware of and familiar with their responsibilities and the vast ramifications of the civil-defense program of the future.

Disaster-Plan Guide

WHEN DISASTER STRIKES, A CHAPTER MANUAL FOR DISASTER PREPAREDNESS AND RELIEF—*The American National Red Cross, National Headquarters, Washington* 13, *D. C.* 1948. 100 *pp.*

The manual describes American Red Cross responsibility in disaster relief, and points out how closely related and yet how distinct are the functions of the Red Cross and the government agencies in this respect.

Because a disaster projects the local government into an intensified situation calling for a full discharge of its responsibilities, fixed by law for the common welfare, it is imperative that local public officials plan to meet their responsibilities should a disaster occur. The manual urges Red Cross chapter committees to work with local officials in arriving at action plans for disasters.

Industrial Location Text

THE LOCATION OF ECONOMIC ACTIVITY—*By Edgar M. Hoover. The Economic Handbook Series. McGraw-Hill Book Co.,* 330 *West* 42*nd St., New York, N. Y.* 1948. 300 *pp.* $3.75.

This thorough and somewhat technical text on the economics of location is primarily intended for classroom use. The various locational factors are approached and analyzed from the viewpoint of producers' motives, which the author maintains are determining in shaping the distribution of activities. Types of locational change and adjustment, and the repercussions they cause, are considered in the light of such factors as transfer and processing costs, labor-market differentials and land utilization. The final section of this text is devoted to "locational pathology" in terms of arrested regional development and blight. Some consideration is given to public policy as an instrument of locational regulation, and the importance and timing of farsighted government action are stressed.

Index to Engineering Projects

INDEX TO TRANSACTIONS, VOLUMES 100 to 112 (1935-1947)—*Published by The American Society of Civil Engineers,* 33 *West* 39*th St., New York, N. Y.* 245 *pp.*

Covering the yearly issues of *Transactions* from 1935 to 1947, this book is a complete index of all the subject matter appearing in the 12 volumes. For the convenience of the researcher, large categorical topics have been broken down into subdivisions that are specific, such as aerial maps and mapping; aerial photography; aerial surveys and surveying. The book includes a list of papers in pamphlet form, with full discussion, which may be purchased from the ASCE.

Municipal Planning for the Civil Engineer

THE PLANNING OF THE MODERN CITY—*By Harold MacLean Lewis. John Wiley and Sons, Inc., 440 Fourth Ave., New York* 16, *N. Y. Jan.* 1949. *Two volumes. Vol. I,* 284 *pp.; Vol. II,* 224 *pp.* $6 *per volume.*

This book stems from the original volume bearing the same title by Nelson P. Lewis, father of the present author, which was published in 1916. Although there is much new material, such as discussions of parking, airports, public housing, and redevelopment of blighted areas, in general the scope of the original volume is followed, and in some cases, such as the introduction and concluding chapter, much of the original wording is still used.

The present work, as was the original, is devoted almost entirely to city planning as an engineering problem or group of problems. It covers only urban planning, and includes no material on either rural or large-scale regional planning. For the most part, also, as in the original volume, the material is based on plans and schemes for large cities. Some of the original illustrative material is still used, though other views in the original work, such as "Fifth Avenue on Easter Sunday," have been brought up to date. There are, of course, also many new illustrations and photographs. The present author's extensive experience, in work with the Regional Plan Association, of New York City, and as a consultant civil engineer and planner, gives the work a concrete and practical character.

Students of civil engineering and planning will find the volumes of value as texts, especially because of the questions and references included at the end of each chapter. Municipal engineers also will profit from adding these volumes to their libraries as good compilations of material hitherto scattered in many sources.

Rehabilitating Youthful Delinquents

PROTECTING OUR CHILDREN FROM CRIMINAL CAREERS—*By John R. Ellingston, Prentice-Hall, Inc.,* 70 *Fifth Ave., New York, N. Y.* 1948. 364 *pp.* $5.

As a result of an American Law Institute study evaluating the administration of criminal justice for youth, a Model Youth Correction Authority Act was proposed by the Institute in 1940. The genesis of the Act, and the story of the workings of the Authority in California, Minnesota, Wisconsin, and Massachusetts, are embodied in this dramatic and optimistic volume by John R. Ellingston.

The Youth Correction Authority plan is based on the newest concepts in criminology and penology. Typical of the enlightened attitude that this agency represents is the fact that the word "correction" has been dropped from the original title, and Youth Conservation Commission, or Youth Service Division, substituted.

The Youth Authority plan is judiciously presented. Its successes as well as its limitations are catalogued, and succinct illustrations hammer the achievements home. The plan, on the juvenile level, eradicates many of the evils of non-segregation of types of offenders, lack of diagnosis, and haphazard training programs.

The functions of the Youth Authority fall into the two major categories—corrective functions on the state level, and cooperation and liaison with community groups to prevent and control delinquency.

Perhaps the most fruitful result of this Authority is that California, which pioneered in its development, has now established a similar Adult Authority.

This volume is an exciting contribution to the field of criminal administration, and has been handled in dynamic and sympathetic fashion.

A. G.

See also "New Police Methods with Children," on page 91, which is a chapter from this book.

"Our Women and Children will walk in safety on streets at night

. . . thanks to our expanding Street Lighting System."

Says Mayor **Thomas A. Burke,**
Cleveland, Ohio

"CIVIC accomplishment goes hand in hand with civic pride," says Mayor Thomas A. Burke of Cleveland, Ohio, "and we are justly proud of our new defense against accidents and crime through the medium of Cleveland's modern street lighting program."

City officials, under Mayor Burke's leadership, supported a bond issue for modern street lighting amounting to $3,250,000.00. During the recent election, the bond issue was endorsed by 74% of the voters . . . a significant reflection of public opinion in regard to the city's need for a planned street lighting program.

Mayor Burke is just one of hundreds of alert, conscientious city officials throughout America who have put public safety high on the list of community requisites. And through the installation of improved street lighting more and more cities are safeguarding the lives and interests of their townspeople.

FOR MORE FACTS
Write for your free copy of "A Planned Program for Better Street Lighting."

The Street and Traffic Safety Lighting Bureau, 155 East 44th St., New York 17, N. Y.

Guide to Action on Parking

PARKING FOR SMALLER CITIES, A FACTUAL GUIDE—*Published by Associated Retailers of Indiana, 808 State Life Bldg., Indianapolis, Ind.* 1948. 138 *pp.* $2.50.

This is a factual guide of current authoritative information for dealing with all phases of the parking problem in smaller cities. The book is designed mainly for local parking-committee members, and makes suggestions on the methods of speeding up action. Chapters are included on every aspect of the problem, written in laymen's language, including one on the ways cities and business can cooperate in the provision of parking facilities. Sketches and photos of various parking lots and parking arrangements help to make the volume of additional value.

The appendix includes model enabling statutes for municipal departments and for parking agencies, information on parking-meter installations and receipts, and a list of selected references on the problem. The book was prepared by engineers of the U. S. Public Roads Administration and the Automotive Safety Foundation.

Norfolk Annexation Report

REPORT ON PRACTICABILITY OF ANNEXATION IN NORFOLK, VA.—*By Thomas H. and Doris D. Reed. Wethersfield, Conn.* 1948. *Mimeo. Tables.* 17 *pp.*

The report contains a summary of recommendations on a proposal to annex 49 square miles of additional territory to the City of Norfolk. The findings conclude that annexation has been delayed woefully long in Norfolk, but that now revenues to be derived from the areas which should be annexed will be much less than sufficient to meet the increased operating and debt-service charges resulting from annexation. However, every year that annexation is delayed, says the report, the wastes inherent in unregulated growth will multiply, and the cost of annexation will increase. It, therefore, recommends the building up of a reserve fund in not more than two years to effectuate annexation as soon as possible.

Texas Local Government

FORMS OF LOCAL GOVERNMENT—*By Stuart A. MacCorkle and Wilfred D. Webb. The Bureau of Municipal Research, University of Texas, Austin, Texas.* 1948. 66 *pp.* $1.

A discussion and evaluation of the various forms of local government in existence in Texas. The first section is devoted to municipal government and the second to county government. The report takes no stand on the best form of government for Texas municipalities, but it does make recommendations for improving government and administration in the 254 Texas counties.

Securing Economy in Municipal Departments

CONSTRUCTIVE ECONOMY IN MUNICIPAL OPERATING DEPARTMENTS—"*Municipal Finance,*" *issue of Nov.* 1948. *Published by Municipal Finance Officers Association of the United States and Canada,* 1313 *E. 60th St., Chicago 37, Ill.* 32 *pp.* 50 *cents per copy.* $1.50 *per year.*

The articles in this issue of *Municipal Finance,* all written by experts in their respective fields, make recommendations for securing administrative economies in police, fire, public-welfare, public-works, and recreation departments. There is also a special article on interest earnings on liquid municipal funds.

Apprehending Speeders

A POLICE TRAINING MANUAL ON THE APPREHENSION OF SPEEDERS—*By Michigan Association of Chiefs of Police and International Association of Chiefs of Police. Printed by the Michigan State Safety Commission, 422 West Michigan Ave., Lansing 15, Mich.* 1948. 14 *pp.*

A training manual which puts down in black and white most of the common day-in-and-day-out methods of apprehending speeders. Five steps in the enforcement procedure are outlined: patrol assignment by place and time, detecting the speeder, pacing the speeder, stopping the speeder, handling the case.

Community Builders Handbook—Revised Edition

THE COMMUNITY BUILDERS HANDBOOK—*Prepared by the Community Builders' Council, Urban Land Institute, 1737 K St., N.W., Washington 6, D. C. Editors, Seward H. Mott and Max S. Wehrly. Revised edition,* 1948. 213 *pp.* $12 *to non-members of Institute;* $8 *to members.*

This new edition of the *Community Builders Handbook* has been enlarged and brought up to date over the one published in 1947 with the addition of sections on trends and operation of garden apartments and new material on shopping centers. The appendix has been revised to include the new FHA protective covenants, and several additions have been made in illustrative material.

The volume is the distillation of the experience of a group of practical large-scale land developers from all sections of the country. Much of the material in the first two sections on "Preliminary Steps in Community Development" and "Planning the Development" will be of special interest and value to local planning officials as well as other municipal-department heads.

The publication is also notable for the wealth of material contained in "Planning and Management of Shopping Centers," a section which occupies about half of the volume.

For additional discussion of the original edition's contents, see page 98 of THE AMERICAN CITY for November 1947.

Housing in Sweden

SWEDEN PLANS FOR BETTER HOUSING—*By Leonard Silk, Duke University Press, Durham, N. C.* 1948. 149 *pp.* $4.

Sweden, despite the cooperative movement, is still a predominantly capitalistic economy, according to the author of this volume; its laissez-faire policy in housing, followed by subsequent government action, offers comparison with and suggestion for U. S. housing programs. The history of Swedish housing development is traced from the Industrial Revolution up to the present.

Extensive space is devoted to post-war conditions and to the present Swedish housing program, which resulted from economic, demographic, and socio-political factors. Among the chief features of government aid to Swedish housing are subsidies for tenants and builders, and aid to non-profit building associations. The housing goals for each year are estimated on the basis of intensive community surveys, and provision is made throughout to insure local participation.

Housing is rapidly achieving public-utility status in Sweden, and aside from its intrinsic interest, many persons may find possibilities for adaptation to the American scene.

Federal Housing Report

HOUSING AND HOME FINANCE AGENCY, FIRST ANNUAL REPORT, CALENDAR YEAR 1947. 277 *pp. For sale by Superintendent of Documents, Washington 25, D. C.* 75 *cents.*

A comprehensive and detailed report of all aspects of housing activity in the country. The report includes separate sections on the Office of the Administrator, the Home Loan Bank Board, the Federal Housing Administration, the Public Housing Administration and the National Housing Council. Roundups are given of state and municipal activity in the housing field and of federally aided housing. A wealth of information is contained in the report on housing supply, needs, and prices. Lists of various federal publications pertaining to housing are also included.

Industrial Waste Treatment

TREATMENT AND DISPOSAL OF INDUSTRIAL WASTE WATERS—*By B. A. Southgate, Director, Water Pollution Research Board of the Department of Scientific and Industrial Research. H. M. Stationary Office, York House, Kingsway, London, W.C. 2.* $3.65.

Reported to be one of the first books on this subject published in England for several years, it gives a direct picture of industrial-waste treatment as practiced in England, and in doing so presents a clear picture of sewage treatment in general.

Store Modernization Reports

STORE MODERNIZATION, 1948—*Report of Clinics and Forums presented at the 2nd International Store Modernization Show. Published by Store Modernization Show, Inc., 40 E. 49th St., New York 17, N. Y.* 181 *pp.* $5.

Talks and discussions by leading experts in the store modernization field, as well as photographs of some of the more striking improvements, are presented in this handy-sized volume. Chapters are included, together with question-and-answer forums, on the following subjects: store layout and traffic, store lighting and color, displays and fixturing, store fronts, planning, and budgeting.

Store-Design Guide

SHOPS AND STORES—*By Morris Ketchum, Jr. Reinhold Publishing Corp., 330 W. 42nd St., New York, N. Y. Sept.* 1948. 308 *pp.* $10.

A wealth of information of direct and practical value to merchants, architects, and planners interested in store and shopping-center design is contained in this handsome, well-illustrated volume. The author, of the architectural firm of Ketchum, Gina and Sharp, has had extensive experience and enjoys an international reputation for store design.

Five of the book's sections are devoted to stores and their arrangements, including planning of sales space, equipment, materials and structure, the store front, and typical shops and stores. The final section on "shopping environment" contains discussions on the outdoor shopping street, drive-in shops and stores, and neighborhood and regional shopping centers. Plans are included for the Beverly and Framingham, Mass., regional shopping centers, and for the redevelopment of the Rye, N. Y., business district, for which Mr. Ketchum served as consulting architect.

Uses of Chlorine

CHLORINE—*Pittsburgh Plate Glass Co., Columbia Chemical Div., Fifth Ave. at Bellefield, Pittsburgh 13, Pa., and the Southern Alkali Corp., Pittsburgh.* 1948. 72 *pp. Copies free upon request.*

Including a history of chlorine, its uses, method of manufacture, information on the transportation and handling, and basic technical data, the book gives a detailed report on this chemical, which has assumed major importance in water and sewage treatment as well as in various other phases of municipal testing and treatment. The material is presented on a level that is comprehensible to the layman and student as well as technical, transportation, purchasing, and other personnel concerned with the product.

State Advertising Programs

ADVERTISING BY THE STATE—*The Council of State Governments, 1313 E. 60th St., Chicago 37, Ill. May* 1948. 39 *pp.* $1.50.

A report on advertising appropriations and how they were spent in each of the states. The publication points out that state promotion is an integral part of any state planning and development program to assist agencies, organizations, and individuals in their efforts toward the physical, economic, and social development of the state. The report contains summary charts on major themes used in industrial advertising, major advertising media, and information on whom the advertising is designed to attract. Local organizations and officials might well investigate possibilities of "tie-ins" with some of the state programs.

Fire Protection for Business Areas

PROTECTION OF HIGH VALUE AREAS—*Issued by the National Fire Waste Council and the Chamber of Commerce of the United States, Washington, D. C.* 1948. 21 *pp.*

This publication, of special interest to local chambers of commerce, is designed to point out where local businessmen and industrialists can obtain reports on their own business district and city, what the fire problems in their city are, and what can be done about them. A plan of action being tested in Schenectady, N. Y., by the local chamber is outlined.

The report is attractively printed and easy to read. It strongly urges the installation of automatic sprinklers as the first line of fire defense.

WINTER The Athey Force-Feed Loader loads snow quickly and cleanly.
SPRING After "Caterpillar" Motor Graders clean ditches, the Athey Force-Feed Loader is the fastest machine for loading windrowed material.
Year 'Round Usefulness-
SUMMER The Force-Feed Loader's clean pick-up permits salvaging old blacktop on summer resurfacing jobs.
FALL "One-lane" operation keeps traffic flowing when loading sod from trimmed berms with the Athey Force-Feed Loader.

Work knows no season for the Athey Force-Feed Loader. It's the fastest, most economical year 'round answer to state, county and municipal loading problems. It's the ideal machine for loading windrowed material on ditch cleaning, berm trimming, snow removal and resurfacing operations.

See your Athey-"Caterpillar" dealer today for details on the Athey Force-Feed Loader—a real time and money saver for states, counties, cities and contractors.

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FORCE-FEED LOADERS

Getting Bills Through State Legislature

WORKING WITH A LEGISLATURE—*By Beatrice Sawyer Rossell. American Library Association, Chicago, Ill.* 1948. 82 *pp.* $1.90.

Though this pamphlet is concerned mainly with the passage of state library legislation, much of its contents will be found of practical value for leagues of municipalities and municipal officials who will be concerned with the enactment of legislation on local affairs during the months ahead. Getting a bill through a state legislature may be an art, not a science, but if the ideas set forth in the pamphlet are followed, chances of favorable action should certainly be greatly increased.

Statute Making Explained

STATUTE MAKING—*By Armand B. Coigne. Commerce Clearing House, Inc. 214 N. Michigan Ave., Chicago, Ill.* 1948. 277 *pp.* $4.

The procedures involved in enacting statute law on the federal, state, and local levels are lucidly and competently dealt with in this recent Commerce Clearing House publication.

There is a consideration of influences that may affect passage or defeat of a bill, the step-by-step processes involved in the use of the initiative and referendum, as well as of legislative organization and such phenomena as "skeleton bills."

Valuable summaries of typical and atypical features of legislative method in the various states are included. Local officials will be interested in the compilation of subjects on which the various states do not permit localities to enact ordinances.

The book does not presume a legal background for the reader. Its primary use will be as a reference guide to material that is not generally procurable elsewhere.

Denver Financial Study

FINANCING MUNICIPAL GOVERNMENT IN DENVER—*By E. T. Halaas and H. E. Hurst. Bureau of Business and Social Research of the University of Denver.* 1948. 84 *pp.*

A valuable study of Denver's fiscal situation, concerned largely with measures for increasing revenue. The study first presents the situation in respect to revenue and expenditure relationships which culminated in a current revenue deficiency in 1947. This is followed by an examination of possible means for enlarging city income. Features of certain individual taxes not now employed, and some that are, are described and appraised in terms of their productivity and feasibility. Particular reference is made to two types of taxation, namely, the sales tax and the gross income or "payroll tax."

On grounds of expediency—which is taken as a deciding factor—the report points out that the retail sales tax currently in force has a definite advantage, as administrative machinery exists and people are used to this form of taxation in Denver, while the gross-income tax is as yet largely unknown.

Planning of Films

MOTION PICTURE FILMS ON PLANNING AND HOUSING—*American Society of Planning Officials, 1313 E. 60th St., Chicago 37, Ill.* 1948. *Mimeo.* 5 *pp.* 50 *cents.*

A useful annotated listing of films available for local showings, together with names and addresses of film producers and distributors.

Milwaukee Economic Study

REPORT OF THE COMMISSION ON THE ECONOMIC STUDY OF MILWAUKEE—*Available from Municipal Reference Library, City Hall, Milwaukee, Wis. Nov.* 1948. 237 *pp.* $2.50.

A most thorough and valuable report on Milwaukee's economic situation, carried out by a staff under the direction of Professor Harold M. Groves of the University of Wisconsin. The report recommends several additional sources of new revenue and evaluates Milwaukee's current improvement program. It also concludes that Milwaukee should continue its present policy of pay-as-you-go financing for improvements, except to support self-liquidating projects by revenue bonds as in the case of municipal acquisition of public utilities, parking facilities, or public housing. A section is also devoted to government simplification and the possibility of shifting some functions from the city to the county, such as sewerage, health, police and fire protection, library, museum, and harbor services.

The report is attractively printed, with many illustrations and easy-to-read, multi-colored charts.

Basic Municipal Documents—A Checklist

CHECKLIST OF BASIC MUNICIPAL DOCUMENTS—*State and Local Government Special Studies: No. 27. Prepared by Governments Division, Bureau of the Census.* 1948. 92 *pp. For sale by Superintendent of Documents, Government Printing Office, Washington 25, D. C. 35 cents.*

This publication contains 2,046 titles of basic municipal documents from the 92 largest cities in the country, those having populations of over 100,000 in 1940. The documents are tabulated by city, to give inclusive information for each municipality as an area for which diverse local-government functions are reported in various published materials. In addition, city government is viewed in its comparative aspect by means of a subject index—so that researchers may readily ascertain source materials of various cities as to a particular function.

The list includes all currently issued serial publications—such as annual, quarterly, monthly, and weekly reports—and some selected basic documents which may be published occasionally or on a one-time basis, such as the charter, general code of ordinances, city plans, etc.

Planning and Housing Reports

ARIZONA—The Highways of Arizona Need Protection, Where Can They Find It? The Roadside Bulletin, Sept. 1948. National Roadside Council, 119 East 19th St. New York 3, N. Y. Illus. 27 pp.

BROOME COUNTY, N. Y.—Housing in Broome County, a Five-Year Forecast. Report by the Broome County Planning Board, 109 County Office Bldg., Binghamton, N. Y. Nov. 1948. Mimeo. Tables. 14 pp.

DETROIT, MICH.—Planning Detroit, 1947. City Plan Commission, 1214 Griswold St., Detroit 26. 36 pp.

HICKORY, N. C.—Population and Economy. Hickory Planning Board, Hickory. Oct. 1948. Maps. Graphs. Tables. 18 pp.

NEW YORK—Housing Legislation in New York State—1948 Community Service Society, 105 East 22nd St., New York 10. Mimeo. Tables. 34 pp. 20 cents.

PHILADELPHIA, PA.—A Community Studies Its Schools. Eight school districts cooperate in making their own study to determine whether they should erect a joint senior high school and to consider possibilities of better utilization of existing school plants. Assisted by Pennsylvania Economy League, Inc., Southeastern Division, Philadelphia. Oct. 1948. Mimeo. Tables. Maps. 37 pp. $1.

RICHMOND, VA.—Annual Report of the Richmond City Planning Commission, Feb. 1947-June 30, 1948. Tables. 16 pp.

TORONTO, CANADA—Report, County of York Planning Survey, June 1948. Toronto and York Planning Board, City Hall, Toronto. Mimeo. Tables. Maps. 42 pp.

UNITED STATES—The Prohibition of Residential Development in Industrial Districts. By S. H. Mott and M. S. Wehrly. Urban Land Institute Technical Bulletin No. 10. 1737 K St., NW., Washington 6. Nov. 1948. Map. 7 pp.

WINNIPEG, CANADA—City's Appearance. Master Plan Report No. 9, prepared jointly by Metropolitan Planning Committee and Winnipeg Town Planning Commission. 1948. Illus. 31 pp.

WISCONSIN—Conference on Veterans' Housing, Oct. 25, 1948. Sponsored by the Wisconsin Veterans Housing Authority, Madison. Mimeo. 15 pp.

YONKERS, N. Y.—Report on the Retainment of Certain Municipally Owned Lands for Present and Future Public Uses. Yonkers City Planning Board, City Hall, Yonkers 2. Sept. 1948. Mimeo. Tables. 46 pp.

Other Reports Received

CALIFORNIA—The Incorporation of Cities Under California Law. Prepared by J. D. Kitchen, Bureau of Governmental Research, University of California, Los Angeles. Nov. 1948. Mimeo 8 pp.

CHICAGO, ILL.—Annual Report of the Chicago Police Dept. 1947. Obtainable from Municipal Reference Library, 1005 City Hall, Chicago. 3 cents.

CONCORD, N. H.—Annual Report of the Board of Water Commissioners, 1947. Tables. 20 pp.

CONNECTICUT—The Organization of the Connecticut State Government. Nov. 1948. Prepared by Connecticut Public Expenditure Council, 21 Lewis St., Hartford. Nov. 1948. Tables. Charts. 39 pp.

GARDNER, MASS.—Annual Report of the Water Dept. 1947. Tables. 20 pp.

LITTLE ROCK, ARK.—Annual Report 1947. Prepared by the Board of Water Works Commissioners. Illus. Tables. Graphs. 83 pp.

MARYLAND—Report to the General Assembly of 1949. Proposed Bills. Vol. 1. Prepared by the Maryland Legislative Council, Annapolis. 258 pp.

MICHIGAN—Salaries of Village Officials in Michigan. Information Bulletin No. 56. Michigan Municipal League, 205 S. State St., Ann Arbor. Sept. 1948. Mimeo. Tables. 50 cents.
—Salary and Wage Data, Michigan Cities of More than 10,000 population. Michigan Municipal League, 205 S. State St., Ann Arbor. March 1948. Mimeo. $1.

NEW JERSEY—Annual Report of the Division of Local Government, 1947. Prepared by Dept. of Taxation and Finance, Div. Local Government, Trenton. Tables. 565 pp.
—Look To the Community. New Jersey Citizens Conference, Box 854, Trenton 5. Sept. 1948. Mimeo. 12 pp.
—New Industrial Digest of New Jersey. By New Jersey Council, Dept. of Economic Development, State House, Trenton. Charts. Tables. Maps.

NEW YORK, N. Y.—Annual Report of the Comptroller of the City of New York, 1947-1948. City Hall, New York. Tables. 434 pp.
—City Traffic Control. Report of the Citizens Budget Commission, 51 East 42nd St., New York 17. Oct. 1948. Tables. 40 pp.

PASADENA, CALIF.—Annual Report of the Pasadena Water Dept. 1947-48. Graphs. Charts. Maps. 68 pp.
—Annual Report of the City Controller for year ended June 30, 1948. Mimeo. Tables. Graphs. 95 pp.

PENNSYLVANIA—A Manual of Procedures for Merging Local Government Units. By the Pennsylvania Local Government Commission, Harrisburg. May 1948. 15 pp.

PHILADELPHIA, PA.—Symposium on Mineral Aggregate (1948). Special Technical Publication No. 83. American Soc. for Testing Materials, 1916 Race St., Philadelphia. Tables. Graphs. 232 pp.

RACINE, MICH.—Racine Centennial, 1848-1948. Illus. 48 pp.

RIVERSIDE, CALIF.—Annual Report, Board of Public Utilities. Electric Light and Water Dept. Riverside. Illus. 20 pp.

TRENTON, N. J.—Latest Financial Statistics of New Jersey Municipalities. Compiled by New Jersey Taxpayers Assn., 414-17 Broad St., Trenton. August 1948. Tables. 40 pp. ($1.00.)

UNITED STATES—Census Publications 1947. U. S. Dept. of Commerce and Bureau of the Census, Washington, D. C. Tables. 204 pp.
—Large City Finances in 1917. Dept. of Commerce, Bureau of the Census. Washington 25, D. C., Nov. 1948. Tables. 55 pp.
—The Meaning of the 1947 Baby Boom. Vol. 33, No. 1. Federal Security Agency, Public Health Service. By P. K. Whelpton, Scripps Foundation for Research in Population Problems, Miami University, Oxford, Ohio. Mimeo. Graphs. Tables. 9 pp.
—Final Report by National Committee for Rat Control. June 30, 1948. 824 Investment Bldg., Washington 5, D. C. Mimeo. 18 pp.
—National Directory of Safety Films. 1948-49. National Safety Council, Inc., 20 North Wacker Drive, Chicago 6, Ill. Illus. 55 pp. 25 cents.

WASHINGTON—Youth Problems, Child Labor and Institutional Services. Published by Bureau of Governmental Research and Services, University of Washington, Seattle 5. Sept. 1948 Mimeo. 29 pp.
—Skill Game Ordinances in Washington Cities. Information Bulletin No. 109. Published by the Assoc. of Washington Cities, University of Washington, 262 J. Allen Smith Hall, Seattle 5. Mimeo. 15 pp.

WICOMICO COUNTY, MD.—Improving the Government of Wicomico County. By E. A. Mauck. Bureau of Public Administration, University of Maryland, College Park. 1948. Charts. 56 pp.

Cities that lead a DUAL life *like it!*

Vancouver, B. C., one of the largest Dual installations in Canada.

DUAL Automatic Parking Meters win new friends wherever they are installed. That's because Dual's *plus values* simplify traffic control—because Duals are engineered to operate practically maintenance-free.

Here are typical comments, from City Engineers in Vancouver, B. C. "The Dual Automatic Meter is of good construction . . . has good accessibility . . . ease of operation . . . is good from the standpoint of unintentional or intentional misuse".

Duals are successful because they are rugged, precision-built instruments. The mechanism is a completely packaged unit. And Duals are *weather-proof* and *tamper-proof*—operate *automatically,* no levers to cause servicing problems.

If your community is considering installing parking meters, be *sure* to get all the facts about Dual Automatics. You'll see why they're favorites in cities and towns from coast to coast—in Canada and the U. S. Write today for free, informative Bulletin DU-501. Ask our engineers for helpful survey service.

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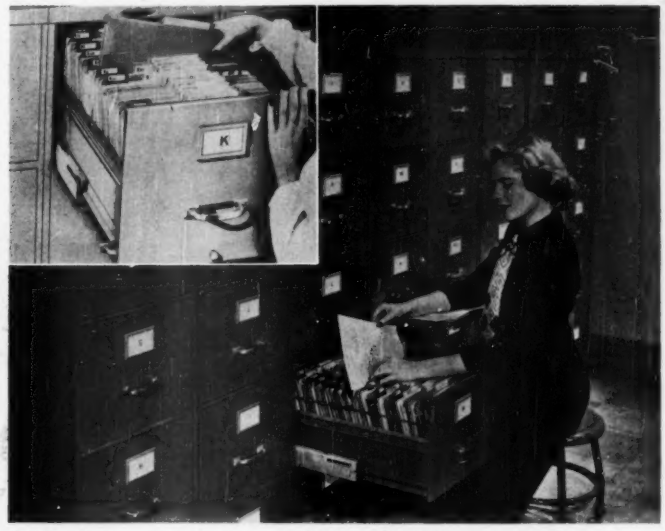
. . . YOUR BEST ANSWER TO EVERY PARKING PROBLEM

News and Illustrations

Items of interest to city, town and county officials and others concerned with the economical construction and efficient operation of public improvement undertakings

Good Movie on Simplified Filing



Modern cabinets containing scientific systems of filing and a simplified alphabetical filing system.

"It Must Be Somewhere!" is a sound-color moving picture contrasting the old-fashioned (probably your own) crowded file room with the convenience of a filing department designed to produce the wanted document instantly.

Just released by the Systems Division of Remington Rand, Inc., the picture has three elements of interest to municipal officials. It constructively highlights the faults and corrections of filing systems in any office or department. It does this entertainingly, furnishing a half hour of profitable enjoyment. It is available without cost or obligation to any municipal group, in a city, association or local chapter of an association Any Remington Rand local office will gladly arrange for your group to see this outstanding educational film, and will supply the services of an experienced operator and all necessary projection equipment without cost; or address Remington Rand, Inc., 315 Fourth Ave., New York 10, N. Y.

Starting point of this action-drama is the discovery by an executive that an important paper which should be in the files cannot be located. The delay in producing this paper almost results in the loss of a valuable customer. The film then takes the harried executive and his equally harassed office staff through a series of episodes that dramatize the crucial significance of modern, simplified filing records operation.

Plot interest is sustained throughout by the young, progressive office manager who goes to the heart of the trouble when he says to the executive: "Adding girls won't help . . . it's the system that's at fault, or the lack of it . . . our whole filing system needs to be re-organized;" the Systems Specialists whose calm appraisal of the situation leads to better filing; a cast of clerical workers whose morale soars as a result of the modernization. Produced by one of the leading industrial motion picture companies, "It Must Be Somewhere!" is a good story.

One-Third of Refuse Truck Opens for Loading

On the News and Illustrations page appearing in the November issue of THE AMERICAN CITY, and in the advertisement of the same issue, the captions for the photographs illustrating the Pak-Mor garbage-disposal unit erroneously stated that the loading doors were wide open when actually the pictures showed the doors only partially open.

On this unit, manufactured by the Alamo Welding & Boiler Works, San Antonio, Texas, the entire top and sides on the front third of the body open for the reception of garbage, with the opening low enough for loading at about hip height.

Other advantages of the Pak-Mor, which has a capacity of about 18 cubic yards, are an all-enclosed steel body that prevents offensive odors, and a packer-plate action which pushes the entire contents of the truck out through the rear doors; no hydraulic cylinder is required, and the truck is emptied in a half minute or less.

Nat'l Water Main Cleaning Gives Luncheon for Olding

A luncheon was recently given for L. S. Olding in commemoration of his long service with the National Water Main Cleaning Co., 50 Church St., New York 7, N. Y., during the meeting of the California section of the American Water Works Association. Mr. Olding joined National Water Main Cleaning in 1920, and during the past 29 years he has cleaned several million feet of pipe in water plants all over the United States and in a number of foreign countries.

L. S. Olding

Present at the luncheon were:

C. B. Abbott, Water Works Supply Co., San Francisco, Calif.

D. A. Blackburn, Water Dept., Pasadena, Calif.

I. T. Callister, Centriline Corp., New York, N. Y.

J. A. Frank, National Water Main Cleaning Co, New York, N. Y.

R. E. Hemborg, Dept. Water & Power, Los Angeles, Calif.

F. T. Higgins, Water Dept, Long Beach, Calif.

C. N. Isaacson, Water Works Supply Co., Los Angeles, Calif.

M. S. Jones. gen. mgr., Water Dept., Pasadena, Calif.

R. C. Kennedy, asst. gen. mgr., East Bay Mun. Util, Distr., Oakland, Calif.

H. M. Neighbor, mgr., Water Dept., Santa Ana., Calif.

E. M. O'Neill, Water Dept., San Diego, Calif.

A. F. Poulter, mgr., Calif. Water & Tel. Co., National City, Calif.

Fred D. Pyle, hydraulic engr., Water Dept., San Diego, Calif.

Robert C. Sargent. American Pipe & Construction Co, Los Angeles, Calif.

E. T. Sharp, Dept. Water Power, Los Angeles, Calif.

R. A. Skinner, Met. Water Distr. of So. Calif., Los Angeles, Calif.

Brennan S. Thomas, gen. mgr. Water Dept., Long Beach, Calif.

Earl F. Thomas, Water Dept., San Diego, Calif.

Hugh M. Wood, Water Dept., Ventura, Calif.

Handy Hypo for Healthful Water

Hypo-chlorination with HTH is the handy "do-it-today" way to disinfect reservoirs, basins, flumes . . . to sanitize filters, tanks and aqueducts. Convenient HTH permits on-the-spot sterilization of newly-laid water mains and other strategic points in your water supply system. And when a main breaks, a flood strikes or other emergencies arise, HTH is on the job in a jiffy—*if* you have it on hand. So order your supply today . . . and write for the 1948 edition of Mathieson's factful booklet: "Hypo-Chlorination of Water". Mathieson Chemical Corporation, 60 East 42nd St., New York 17.

Mathieson
SANITATION HTH

Sanitation HTH . . . PH-Plus (Fused Alkali) . . . Liquid Chlorine . . . Chlorine Dioxide . . . Caustic Soda . . . Soda Ash . . . Bicarbonate of Soda . . . Ammonia, Anhydrous & Aqua . . . Dry Ice . . . Carbonic Gas . . . Sodium Chlorite Products . . . Sodium Methylate

SANITATION HTH IS AVAILABLE IN CASES OF NINE HANDY 5-LB. CANS AND IN 100-LB. DRUMS.

W. R. Wilson Dies

William R. Wilson, President of Conklin & Harrington, Inc., and Treasurer of the Good Roads Machinery Co. of New York, Inc., died in New York on December 2nd.

Mr. Wilson was born in Schuylerville, N. Y., and spent his early manhood in Saratoga Springs. For many years he was in the industrial boiler and heating business and entered the construction machinery industry in 1912 with the Tarrant Manufacturing Co. of Saratoga Springs.

In 1916 he became sales manager of the Good Roads Machinery Co. at Kennett Square, Pa. While with Good Roads, he was loaned to the War Resources Board in Washington, D. C., during World War I, as an authority on construction equipment, and served on that committee throughout the war.

Mr. Wilson returned to Good Roads and in 1927 joined the late Walter G. Harrington in the Goods Roads Machinery Co. of New York, Inc. He was particularly active in pioneering snow-fighting equipment in the New England states and in distributing Galion road machinery and the Klauer Snogo.

On the death of Fred H. Conklin, vice-president and manager of Conklin & Harrington, Inc. in 1941, Mr. Wilson was elected to that office, becoming president after the recent death of Walter G. Harrington.

Conklin & Harrington, Inc. was one of the earliest concerns to specialize exclusively in the export of construction machinery. At the present time they handle export business for Drake-Williams-Mount Co, Omaha, Nebr.; Eagle Crusher Co., Inc., Galion, Ohio; Rogers Bros. Corp., Albion, Pa.; Root Spring Scraper Co., Kalamazoo, Mich.; Tarrant Manufacturing Co., Saratoga Springs, N. Y.; White Manufacturing Co., Elkhart, Ind.; and Wm. Bros Boiler & Manufacturing Co, Minneapolis, Minn.

As treasurer of the Good Roads Machinery Co. of New York, Inc., Mr. Wilson was actively interested in the sales distribution of the Barnes Manufacturing Co., Mansfield, Ohio; Diamond Iron Works, Inc., Minneapolis, Minn.; Galion Iron Works & Manufacturing Co., Galion, Ohio; Klauer Manufacturing Co., Dubuque, Iowa; Rogers Bros. Corp., Albion, Pa.; and the United Steel Fabricators, Wooster, Ohio.

He will be succeeded as president of Conklin & Harrington, Inc. by Mr. Herbert A. Harrington.

Emergency Lighting Unit

A new emergency lighting unit that plugs into any standard outlet has been introduced by the U-C Lite Mfg. Co., 1050 West Hubbard St., Chicago 22, Ill. The Big Beam Model 2-AD Special automatically switches on to provide flood lighting over a large area whenever the regular lighting current fails or is interrupted. Such emergency lighting prevents confusions, panics, and disaster in hospitals, institutions, large municipal buildings, or wherever there are crowds.

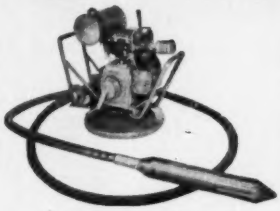
Operating on one 9-volt, standard dry

battery that is easily replaced, the unit has an 8-foot rubber-covered cord and plug that fits any 110- or 120-volt standard lighting outlet.

National Aluminate Opens Philadelphia Office

A. H. Webber, district manager for the National Aluminate Corp., 6216 West 66th Place, Chicago 38, Ill., has been placed in charge of the company's new Philadelphia office at 500-501 Independence Bldg., 5th and Walnut Sts.; assisting him are J. F. Reardon and B. J. Lamb.

The company has also established a warehouse in Camden, N. J., which will carry in stock most Nalco products.



Concrete
VIBRATORS
Gasoline Engine or Electric Motor Driven
CONCRETE GRINDERS

OTHER PRODUCTS
FRONT END LOADERS
for Industrial Tractors
HEATING KETTLES
for Asphalt and Tar
AGGREGATE DRYERS
for Stone and Sand
ASPHALT PLANTS
Portable—Stationary
Write for Circulars

White Mfg. Co.
ELKHART INDIANA

Here is a *modern*, thoroughgoing method of renewing city sidewalks and protecting the valuable rental space underneath. Plastic Rock processes make an enduring job, waterproof where necessary; not affected by heat or cold; easy to apply; absolutely slip-proof wet or dry; applied without interruption of traffic; dries ordinarily in 24 hours. Used and praised by many large cities and property owners. Plastic Rock is packed complete in sealed barrels; ingredients are uniform; merely add water; U. L. I. field supervision is available without obligation.

Write for Our Report No. 220-36

UNITED LABORATORIES, Inc.
16814 Euclid Ave., Cleveland 12, Ohio

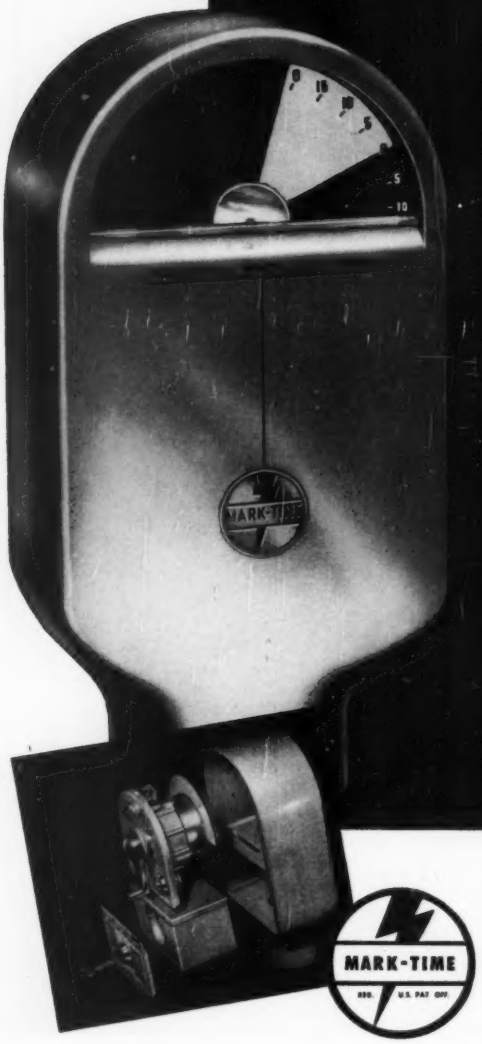
We shall be glad to give you a complete, reliable report on your sidewalk situation. No obligation.

PRODUCTS AND PROCESSES for PROTECTING PROPERTY
Field Representatives All Over The World

THE *Rhodemaster*

ASSURES YOUR COMMUNITY

- *trouble-free winter operation* (no oil to freeze)
- *utmost dependability*
- *sustained revenue*
- *minimum service expense*
- *complete motorist satisfaction*



The Rhodemaster alone gives you these advantages. It is a proven, efficient, public servant, offered by a company that has specialized in parking meters since 1936.

MARK-TIME

M. H. RHODES, INC.

30 BARTHOLOMEW AVE. • HARTFORD 6, CONN.

Athey Makes Two Appointments

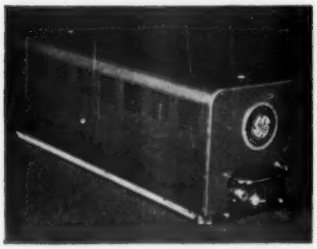
Gerry Britton has been appointed sales manager and E. B. Schlenk district representative by the Athey Products Corp., Chicago, Ill.

Gerry Britton E. B. Schlenk

Mr Britton joined Athey as assistant domestic sales manager; he was previously with the Kaiser-Fraser farm-implement division. Mr. Schlenk will take over Athey's Central Territory contacting Athey-Caterpillar distributors in that area. Before the war, Mr. Schlenk was in the industrial sales force of S. C. Johnson & Son, Inc.

Single-Unit Mobile Transmitter-Receiver

Designed for police departments, public utilities, and other municipal organizations requiring fast communication,



the new single-unit mobile FM transmitter-receiver from the General Electric Co., Syracuse, N. Y., operates in the 152-162 mc frequency band with a carrier frequency stability from minus 30 degrees to plus 60 degrees C of better than plus or minus .002% using a temperature-controlled crystal. Its receiver selectivity is 60 kc, 50 db down, for an adjacent channel, and 120 kc, better than 85 db down, for an alternate channel.

Operating on 6.3 volts d.c., the ES-1-B furnishes transmitter power of 20 watts. Metering jacks and adjustments for squelch and receiver volume are located on the instrument's front end.

The transmitter-receiver, which is 8 inches high, 8 inches wide, 26 inches long, and weighs 46 pounds, has quick-heater tubes in the transmitter, positive action relays in all control circuits, and jacks to measure directly all important receiver and transmitter circuits.

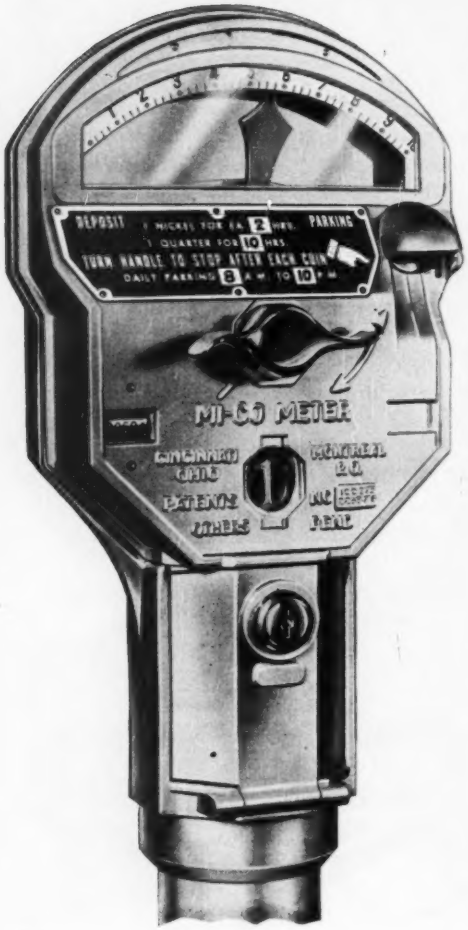
You Can Always Count on Briggs & Stratton

- To improve still further and make even better the world's finest 4-cycle, single-cylinder, air-cooled gasoline engines.
- To maintain and even raise the high standards set for materials, workmanship, methods, and precision production.
- To expand and still further improve the world-wide organization of factory approved service stations.
- To continue to be accepted as "preferred power" everywhere for industrial, construction, railroad, and farm equipment.

BRIGGS & STRATTON CORPORATION
Milwaukee 1, Wisconsin, U. S. A.

4 CYCLE
BRIGGS & STRATTON
GASOLINE ENGINES
World Wide FACTORY SUPERVISED SERVICE

the new and improved MI·CO PARKING LOT METER



Here's the ideal off-the-street parking meter because it requires very little attention. And over long periods of time, you'll find that the maintenance expense on this meter is so low it's negligible. ¶MI-CO parking lot meters may be set for almost any number of hours, and to accommodate nickels and quarters with both coins being inserted in the same hooded coin slot. All models of MI-CO Parking Meters (listed below) have one thing in common—*they pay out quickly because they are seldom out of order.*

MI-CO METERS ARE AVAILABLE IN THE FOLLOWING MODELS

Model No. D-1—straight nickel meter, deposit of one nickel will allow maximum of 1 hour parking.

Model No. D-2—multiple coin meter, deposit of one nickel will allow maximum of 1 hour, or deposit of one penny will allow maximum of 12 minutes.

Model No. D-3—straight nickel meter, deposit of one nickel will allow maximum of 2 hours parking.

Model No. D-4—straight nickel meter, deposit of one nickel will allow maximum of 1 hour parking, and deposit of another nickel will allow maximum of 2 hours parking.

Model No. D-5—multiple coin meter, deposit of one nickel will allow maximum of 1 hour parking, or deposit of pennies will allow parking time in increments of 12 minutes each up to five pennies, for maximum of 1 hour.

Model No. D-6—multiple coin meter, deposit of one nickel will allow maximum of 1 hour parking, and deposit of another nickel will allow maximum of 2 hours parking, or deposit of pennies will allow parking time in increments of 12 minutes each up to ten pennies for maximum of 2 hours.

Model No. D-7—multiple coin meter, deposit of one penny will allow maximum of 12 minutes parking, deposit of one nickel will allow 1 hour parking, deposit of another nickel will allow maximum of 2 hours parking.

Model No. D-8—multiple coin meter, deposit of one quarter will allow maximum of 10 hours parking, or deposit of nickels will allow parking time in increments of 2 hours each up to five nickels for maximum of 10 hours.

Model No. D-9—multiple coin meter, deposit of one quarter will allow maximum of 5 hours parking, or deposit of nickels will allow parking time in increments of 1 hour each up to five nickels for maximum of 5 hours.

Model No. D-10—multiple coin meter, deposit of one quarter will allow a maximum of 5 hours parking time and deposit of another quarter will allow maximum of 10 hours parking time, or deposit of nickels will allow parking time in increments of 1 hour each up to ten nickels for maximum of 10 hours.

★ *Before you buy any parking meters, be sure to check the advantages of MI-CO Meters. They offer many outstanding features. Write for complete information and case histories.*

MI-CO METERS, 231 Court St., COVINGTON, KY.

Division of the Michaels Art Bronze Co., Inc. ***Representatives Wanted***

DEMA Holds Annual Meeting

At the Diesel Engine Manufacturers Association annual meeting, held in Chicago December 8, Robert H. Morse, Jr., vice-president in charge of all operations at Fairbanks, Morse & Co., was elected president and treasurer. Elected as vice-presidents were A. W. McKinney, executive vice-president of National Supply Co., and O. H. Fischer, president of the Union Diesel Engine Co. At this table are shown, far side left to right—Mr. Morse; E. J. Schwanhausser, vice-president in charge of sales, Worthington Pump & Machinery Corp.; Knute O. Keel, chief engineer, Cleveland Diesel Engine Division, General Motors Corp.; Dr. John T. Rettaliata, Dean of the School of Engineering, Illinois Institute of Technology; and Gordon Lefebvre, president, The Cooper-Bessemer Corp. In the foreground, left to right—R. Tom Sawyer, manager, Research Dept., American Locomotive Co.; L. V. Armstrong, assistant manager, Oil & Gas Engines Dept., Ingersoll-Rand Co.; and Robert E. Friend, president, Nordberg Mfg. Co.

Western Railroad Supply President, Godfrey Gort, Dies

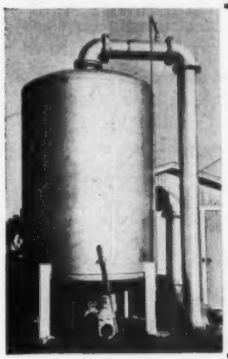
Godfrey Gort, president of the Western Railroad Supply Co., 2428 South Ashland Ave., Chicago, Ill., died recently after a short illness. He had organized the company in 1932, and remained the head of it until his death.

Mr. Gort entered the railway signal business as a wireman's helper on the New York Central and served as assistant signal maintainer, repairman, signal foreman, and construction foreman on the Pennsylvania, Hudson & Manmattan, Norfolk & Western, and Illinois Central until 1913, when he became assistant superintendent of the Crossing Gate Department of the Buda Co.

He remained in that position for two years; then was appointed sales engineer of the L. S. Brach Mfg. Co. Later he was elected vice-president of Brach. In 1929 he became assistant vice-president of the Railroad Supply Co. in New York.

Chain Belt Opens New Warehouse

The Chain Belt Co., Milwaukee, Wis., has established a new Atlanta, Ga., warehouse at 878 Ashby St., N.W., and the Atlanta district office will also be located at the same address under the direction of J. S. Moore. The warehouse will be under the supervision of G. J. Schuelke. Equipment in stock is expected to include Rex and Baldwin-Rex power transmission and conveyor chains, sprockets, belt idlers, and allied power transmission and conveyor equipment.



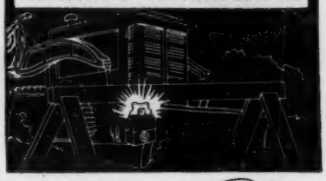
Don't pump your pipe lines and water towers full of sand!
Use a

McCURDY
Sand and Water Separator

Vertical pressure type, helical flow, centrifugal action; built of fabricated steel for any capacity or working pressure. ***Applicable also to other fluids. WRITE:***

McCURDY SAND AND WATER SEPARATOR CO.
4875 Pacific Blvd., Vernon 11, Los Angeles, Calif.

Night Warning At All HAZARDS—BARRICADES



Big Beam 400-F ELECTRIC FLARE

Night wrecks and accidents caused by hazards and barricades can be averted by warning lights and emergency flares. There are a thousand such uses for the Big Beam Electric Flare with red Fresnel lens. Dependable in any weather, set or hang anywhere in any position, knocking over will not interfere with its operation. A flip of the switch gives the choice of either a steady or a flashing flare. Interchangeable clear Fresnel lens converts it to a regular lantern. As easily serviced as a flashlight.

See your supplier, or write direct

U-C LITE MANUFACTURING CO.
1056 West Hubbard Street, Chicago 22, Ill.

CIRCUL-AIR FIRE HOSE DRYER

WRITE FOR BOOKLET

Illustrates how Circul-Air saves hose, shortens drying time, prevents mildew and rot, air conditions as it dries, improves station design.

THE CIRCUL-AIR CORPORATION
575 E. Milwaukee Street
DETROIT 2 MICHIGAN

PLUS Power . . Speed . . Mobility

FEATURING . . .

1½ Cu. Yd. Capacity
Hydraulic Bucket Control
Hydraulic Down-Pressure
Rear-Wheel Power Steering
Automatic Tip-Back Bucket
Four Forward Speeds
2 to 16 mph
Four Reverse Speeds
3 to 24 mph

Write for Free Catalog

on the Model HM or on other sizes of Hough Payloaders—the 1¼ cu. yd. Model HL, the ¾ cu. yd. Model HF, the 10½ cu. ft. Model HA.

Here is an entirely new experience in earthmoving — an entirely new conception of the work capacity and job capacity of a rubber tired tractor shovel. Here is an entirely new tractor shovel—revolutionary in design—revolutionary in performance.

Big and powerful, the 1½ Yd. Model HM PAYLOADER provides tremendous digging power and ground-gripping traction for tough going in rock, sand, mud, muck or *any* terrain. With 4-Wheel Drive on large rubber tires it provides traction comparable to a crawler tractor—plus more speed, greater mobility, easier maneuverability and *far less maintenance expense.*

Compact design, short wheel base and power boosted rear wheel steering enable the HM to operate in close quarters. It has four speeds in either direction and quick acting forward-reverse control. Double acting finger-tip hydraulic control raises — lowers — dumps and closes the bucket . . . provides powerful down pressure for tough digging. Get the complete story on this new PAYLOADER from The Frank G. Hough Co., 710 Sunnyside Avenue, Libertyville, Illinois.

SAY "HUFF"

HOUGH
PAYLOADER
Manufactured by THE FRANK G. HOUGH CO.

Beisber Vice-President For Line Material

The Line Material Co., Milwaukee 1, Wis., has appointed M. E. Beisber assistant vice-president. Mr. Beisber, who has been with the company since 1933, had been sales manager of the Transformer Division before being promoted to his new position; he will continue to supervise that division's sales.

M. F. Beisber

Low-Priced, Heavy-Duty Power Mower

The Moto-Mower Co., 4600 Woodward Ave., Detroit 2, Mich., is now making a new popularly-priced, heavy-duty power lawn mower that cuts a swath of 24 inches. The Lawnkeeper, powered by 1½-hp motor and designed to cut a minimum of 3½ to 4 acres per day, has a 6-inch cutting reel that revolves on roller bearings; the five cutting blades are of crucible steel with a flexible bottom blade.

With the cutting height adjustable from ¾ to 1¾ inches, the Lawnkeeper climbs a 35% grade with ease; a double-v-belt and chain drive together with larger sheaves makes it practical to reduce engine speed, and operation of the mower can proceed at a slow walking speed. Lever control is from the handle bar.

42 in Testing Laboratory Association

The American Council of Commercial Laboratories, 1415 Park Ave., Hoboken, N. J., has raised to 42 the number of laboratories belonging to this association of scientific organizations, through the election to membership of the Pierce Testing Laboratories, Denver, Colo. The addition of the Pierce organization gives representation in the Council to practically every large city, where municipal research and testing are of major importance.

Shuredry IS ON THE JOB!

The old smoke-belching steam pump is a thing of the past... and so is unnecessary damage from smoke and water! Shuredry Green-Bak Salvage Covers, in the hands of trained salvage crews, are protecting merchandise, furniture and fixtures from loss... building new records of achievement in cutting fire losses.

FLORIDA STATE FIREMEN'S ASS'N

is one of the many progressive organizations who use Green-Bak Shuredry Covers to teach modern methods of salvage to smaller departments in their state.

Shuredry

GREEN-BAK SALVAGE COVERS

Approved Factory Mutual Laboratories and National Board of Fire Underwriters

They TOP Every TEST

Shuredry Green-Bak Salvage Covers top every known test for water penetration and seepage. Pressure-impregnated with the exclusive Fulton *dry* treatment, Shuredry covers will not stiffen in cold weather or become tacky in heat. They're always fast to spread... easy to fold and carry.

On your next order to your fire equipment dealer, specify SHUREDRY *Green-Bak Salvage Covers.*

FULTON BAG & COTTON MILLS

Manufacturers Since 1870

New Orleans, Dallas, St. Louis, Atlanta, Minneapolis, Kansas City, Kans., New York

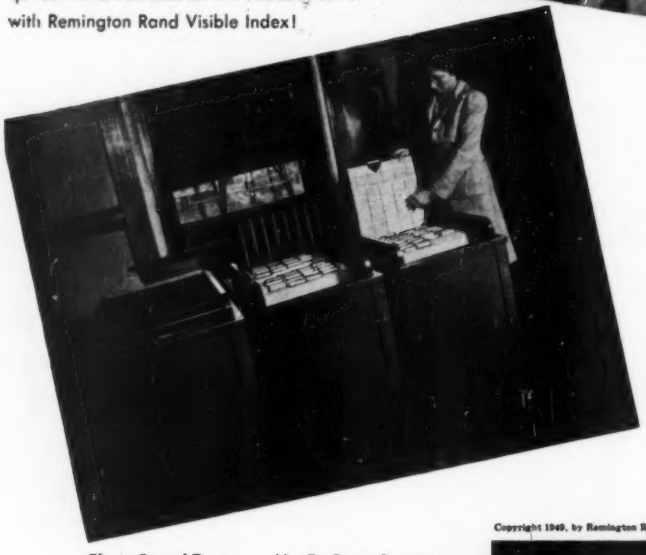
Here's a *Better* way to maintain Poll Lists

Lists are always up-to-date. That's why progressive election officials everywhere are using Index Visible Flexo Panels for maintaining lists of registered voters!

Faster...Less Expensive...More Accurate

Typewritten die-cut cards are filed by street and number on district or precinct panels. Old cards are quickly removed, new ones inserted without changing the sequence of other cards on the panel. Instantly ready for photographing and fast, low-cost reproduction by photolith process.

Copywriting, typesetting, proofreading are "out" with the Index Visible Flexo way! Cuts down errors, costs, time and office space required. Take Poll Lists off the "headache list" with Remington Rand Visible Index!



Flexo Panel Trays used by Du Page County, Wheaton, Ill. Twenty counties in Illinois alone have installed this economical, efficient system of voters' registration lists.

"Now! The Modern Way"— illustrated folder containing complete description of the efficient Visible Index System for Voters' Registration Lists, will be sent to you on request. Just call your nearest Remington Rand Branch Office for a copy of KD 295, or write Systems Division, Remington Rand Inc., 315 Fourth Avenue, New York 10.

Copyright 1949, by Remington Rand Inc.

Remington Rand

THE FIRST NAME IN RECORD SYSTEMS

Scatterproof Trailer For Garbage Collection

Designed primarily for the use of the smaller towns which need an inexpensive yet sanitary closed vehicle for garbage and refuse hauling and collection, the Scatterproof trailer has a capacity of 180 cubic feet under cover.

Sliding aluminum doors, and side loading heights of about 52 inches make for easy loading. The trailer hitches behind a truck or tractor and handles easily in alleys, backing up without difficulty. On the dump, which is from the rear by hand-pumped hydraulic lift, the trailer can be backed over the edge and then withdrawn by the tractor or tow truck, whose wheels remain on firm ground.

The box is 71 inches wide and 120 inches long. There are no projections beyond the side rails of the box to cause trouble in navigation in restricted areas.

The manufacurer is Douglas McKnight, engineer, of 384 South Cotner Blvd., Lincoln 2, Nebr.

Toensing Appointment

W. E. Toensing has been appointed district manager by Gar Wood Industries, Inc., Wayne, Mich., to cover Virginia, North Carolina, South Carolina, and the District of Columbia. He will be responsible for the sale and distribution of Gar Wood truck and tractor equipment, Buckeye ditchers, shovels, finegraders and spreaders, and St. Paul truck equipment.

W. E. Toensing

Before his new appointment, Mr. Toensing was service manager for the St. Paul Division, Minneapolis, Minn.

LeTourneau Introduces Small Tournapull

A new, small-sized unit for high-production earthmoving on small yardage projects has been introduced by R. G. LeTourneau, Inc., Peoria, Ill. Designed for self-loading, the one-man operated Model D Roadster is ideally suited for scattered, small-job assignments.

Traveling at speeds to 25 mph and powered by a 100-hp diesel or gas engine, the prime mover is used with the E-9 Carryall scraper, a 9-ton or 7-cubic-yard heaped-capacity unit.

One of the features is the complete control of all steering and scraper operations by individual electric motors, eliminating the need for a power-control unit. There is also a torque-proportioning differential that automatically supplies power to the wheel on the firmest footing; both wheels are kept pulling at all times so that neither wheel spins independently of the other. Positive power steer enables the operator to lock the Tournapull and Carryall into a single unit and keep this unit traveling in a given direction.

Positive steering contributes to mobility and ease of operation.

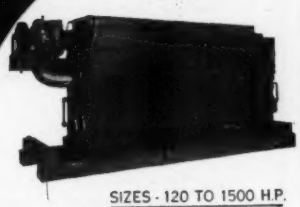
Scoville Appointed By Housing Firm

Samuel A. Scoville, a land development specialist for Previews, Inc., has been appointed to an executive position of the firm of Harrison, Ballard & Allen, 123 E. 77th St., New York 21, N. Y., housing consultants and planners.

BUCKEYE Engines

DIESEL & DUAL FUEL

MEDIUM SPEED HEAVY DUTY UNITS



SIZES - 120 TO 1500 H.P.

built for
- MUNICIPAL
- PUBLIC UTILITIES
- WATER WORKS
- SEWAGE DISPOSAL PLANTS

WRITE FOR CATALOG 907

ENGINE BUILDERS SINCE 1908

The BUCKEYE MACHINE COMPANY

500 E. O'CONNOR AVE. LIMA, OHIO

..BLIND DIGGING wastes TIME and MONEY

FISHER M-SCOPE Pipe & Cable Finder

..... locates pipe bends, dead ends, service stubs, and traces the exact course of buried pipe and cable lines up to 12 feet deep, with pinpoint accuracy. This inexpensive electronic device eliminates time and money wasted on exploratory digging.

FISHER M-SCOPES $149.50 UP DEL.

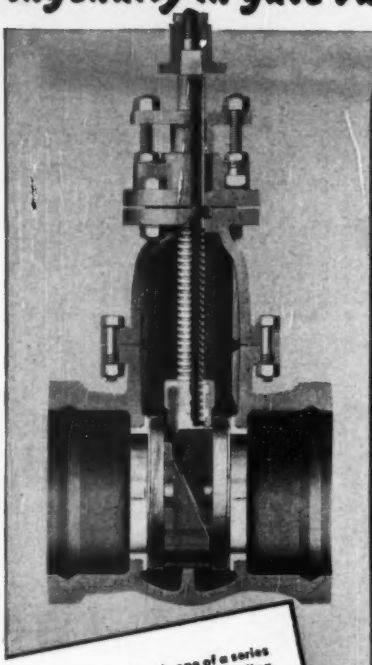
Send for FREE Booklet

16 page operating manual describes M-SCOPE and many of its profitable uses. Write Dept. 3

Fisher Research Laboratory, Inc.

PALO ALTO · CALIFORNIA

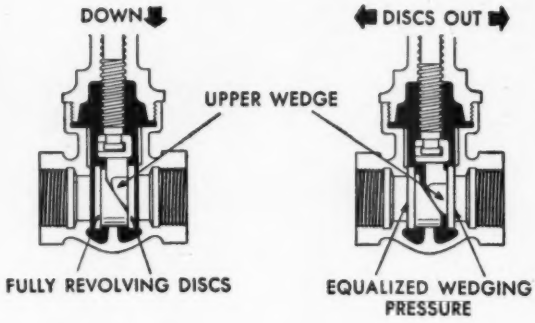
*Ingenuity in gate valve design fulfills seven objectives**



*This advertisement is one of a series showing how the unique Darling Fully Revolving Double Disc Parallel Seat Gate Valves answer the following critical operating problems:

- Positive, easy closing—regardless.
- Automatic adjustment for valve body distortion.
- Elimination of disc-to-seat friction and galling.
- Uniform wear distribution.
- Extreme simplicity.
- Greater service life.
- Simplified maintenance.

POSITIVE, EASY CLOSING ...REGARDLESS!



Regardless of years of hard, continual service, involving anything from extreme disc and seat wear to actual body distortion, this valve continues to give positive, leak-proof closure . . . and without strong-arm methods . . . an advantage found only in Darling Fully Revolving Double Disc Parallel Seat Gate Valves.

Note how the face of the upper wedge is radiused, while the adjacent face of the lower wedge is straight. Thus wedging pressure on the discs is automatically equalized, always uniform. If, because of body distortion, the valve seats become unparalleled, this unique compensating wedge principle still provides perfect seating and tight closure without forcing.

The discs themselves are free to revolve fully and seat in a different position at every closing. Uneven wear, another common cause of leaks, is definitely avoided.

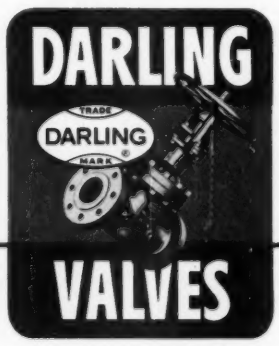
Combine these unique features—automatic seating adjustment and uniform wear—and it's easy to see why these Darling Valves can always be counted on for positive, easy closing—regardless!

DARLING VALVE & MANUFACTURING CO.
Williamsport 10, Pa.

Darling Parallel Seat Gate Valves are available in a wide range of sizes and for all types of normal and unusual service, and for pressures up to 3000 pounds. Likewise, Darling Taper Seat, Solid or Slotted Wedge Gate Valves are available for most services.

Corrosion resistant valves. *In addition to conventional iron, bronze and steel types, Darling specializes in valves for any corrosive fluid: iron body valves with special alloy trim; iron body, rubber lined, with special alloy trim; all bronze; and all special alloy. Darling's 60 years of experience in meeting unusual requirements is always at your service.*

Outline your needs and ask for specific data on the proper Darling Valves... or send for the complete 300-page Darling Catalog No. 17M. It describes Darling Valves of *all* types and is full of valuable information.



THE VALVE MARK OF QUALITY:::WATCH FOR IT

FWD Trucks Move Snow

FWD trucks, manufactured by the Four Wheel Drive Auto Co., 175 E. 156th St., New York, N. Y., were the first four-wheel-drive units on which rotary snowplows and push plows were mounted. They are particularly useful for snow-removal work. The cab-over-engine design and the right-hand steer enable the driver to watch the sidewalk closely while working along the curb, and the traction attained permits

Some of the FWD units with Sicard Snow Loaders recently sold to the New York City Department of Sanitation.

the use of these units under conditions that would cause other types of trucks to bog down.

New York City recently purchased 41 FWD trucks on which were mounted Sicard Snow Loaders. These units are all equipped with reversible chutes with Sicard Snow Loaders, hydraulically controlled by finger-tip operation from the driver's cab; these chutes can be turned on a wide angle so that trucks can be loaded in almost any position. Another feature is the blower attachments, propelled by a 250-hp auxiliary engine mounted on the back of the frame. The blower units load 80 to 85 eight-cubic-yard truck-loads of snow an hour. A record performance was established during the December snowstorm, when the city cleaned up in three days a snowfall nearly comparable to one that took 10 days last year.

Madden Made Vice-President Of Haiss

W. E. Madden has been appointed vice-president of the George Haiss Mfg. Co., Inc., division of Pettibone Mulliken Corp., 141st to 144th Street, on Park Avenue, New York 51, N. Y.

Appointed sales manager of the conveyor division last year, Mr. Madden has been responsible for the outstanding development of Haiss conveyors for coal, aggregates, and package handling.

It's Time to Lubricate

The engine hour meter, made by John W. Hobbs Corp., Springfield, Ill., accumulates on a dial the hours and minutes of an engine's operation. This meter is installed not only on buses and trucks but also on tractors, air compressors, graders, and power shovels. The method of determining when it is time to lubricate motors and change oil is part of preventive maintenance.

The NETCO CATCH BASIN CLEANER

With Pneumatic Controls

A Necessity For Every Municipality

• Simple
• Positive
• Powerful

PNEUMATIC BUCKET

Although it has large capacity, the Netco Bucket will operate through an opening as small as 16 inches. This Bucket will easily remove sticks, stones, bottles, wire, and other such debris from all catch basins.

These Cities and Many Others Own One or More

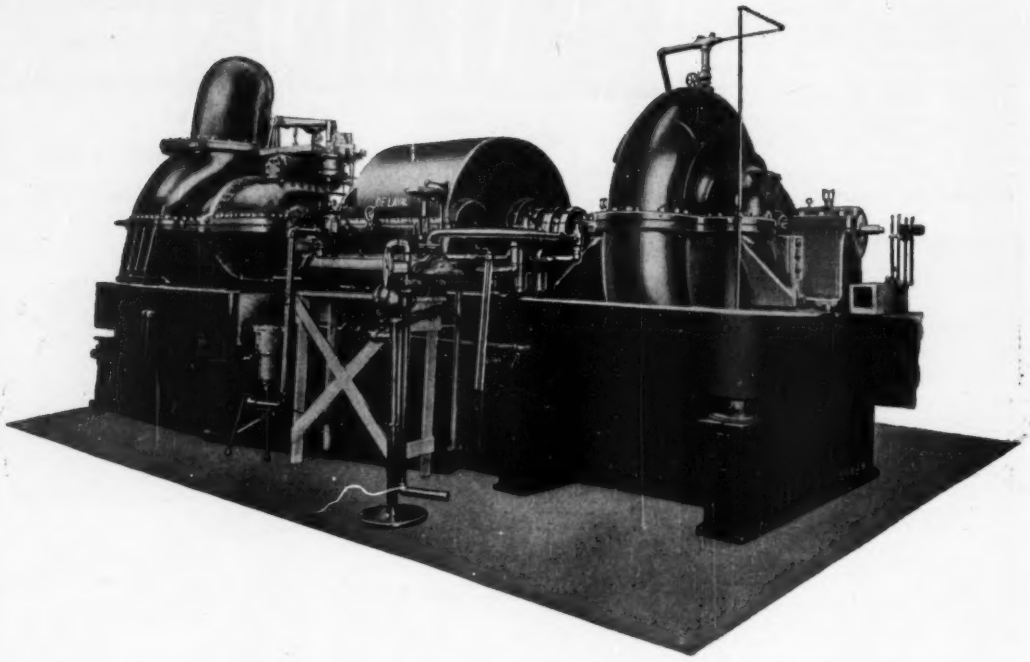
Netco Catch Basin Cleaners

Boston, Mass.
New York City, N. Y.
Indianapolis, Ind.
New Brunswick, N. J.
Harrison, N. J.
East Cleveland, Ohio
Binghamton, N. Y.

- The Netco Catch Basin Cleaner can be mounted on any short wheel base truck having at least 8 ft. in back of cab. You can purchase unit separately and mount on your own chassis.
- The Netco Unit can be removed from truck and chassis in 30 minutes.
- The Netco can be operated continuously because the material removed from catch basins is loaded into other trucks. This unit will average 20 to 30 catch basins per 8 hour day.
- The Netco Bucket closes pneumatically, assuring positive and maximum digging efficiency.
- Positive and simple control of pneumatic bucket, boom swing, hoist clutch and boom brake by compressed air.
- The Bucket is lowered and raised by one cable. Only one hose is required to close it, and it is opened by powerful spring action.
- The Netco has a hoisting capacity up to 1500 lbs.

For Complete Details Contact

NETCO DIVISION
CLARK-WILCOX COMPANY
118 Western Avenue
Boston 34, Massachusetts



On test for Chicago

DE LAVAL 75 mgd TURBINE-DRIVEN PUMP

Within the last twenty-seven years

the City of Chicago has installed De Laval

pumping units having a combined capacity of one billion,

two hundred and forty-five million gallons daily.

The latest of these is a De Laval 75 mgd pump

driven by a De Laval turbine employed to provide

maximum economy at varying rates of delivery.

DE LAVAL WW4

STEAM TURBINE CO., TRENTON 2, NEW JERSEY

Toronto • Tulsa • Vancouver • Atlanta • Boston • Charlotte • Chicago • Cleveland • Denver • Detroit
Winnipeg • Edmonton • Helena • Houston • Kansas City • Los Angeles • New Orleans • New York
Washington, D. C. • Philadelphia • Pittsburgh • Rochester • St. Paul • Salt Lake City • San Francisco • Seattle

TURBINES • HELICAL GEARS • WORM GEAR SPEED REDUCERS • CENTRIFUGAL PUMPS • CENTRIFUGAL BLOWERS AND COMPRESSORS • IMO OIL PUMPS

New Battery Chargers

The Power Equipment Co., 55 Antoinette St., Detroit 2, Mich., has developed a new line of electronically-

The 60-cell, 6-ampere power station battery charger, Model No. PEC 512.

controlled and regulated floating battery chargers, for power stations, communications, and other applications requiring accurate control of floating voltage.

Fully automatic in operation, the new standard charges have constant potential output, and are designed to maintain floating charge on the battery group to within plus or minus 1%. This close control of floating voltage is important in determining battery life inasmuch as it eliminates the deteriorating effects of over- or under-charging; the need for addition of water is reduced to about twice a year due to the elimination of excessive gassing.

Electronic overload protection is provided, automatically limiting the current to the pre-set maximum value and preventing over-loading of the charger by reduction of the terminal voltage below the battery voltage. This permits the battery to carry the load until the peak requirement has passed. The battery is then automatically recharged and floated until the next power demand is received.

Labor Saving Leaf Loader

A factor that is creating considerable interest throughout the country among "top brass" in municipalities is the saving in labor and time through the use of the Vacuum Leaf Loader manufactured by the American Structural Steel & Tank Co., Detroit 19, Mich.

The company states that it has records of the Leaf Loader being used not only to pick up leaves, wet or dry, but also to clean picnic areas, parks, ball diamonds, and other public gathering places, as well as for ventilating buildings and other areas.

An illustrated folder describing this machine is available from the company.

Olson Engaged By Morton Salt Co.

Harald M. Olson, water treatment engineer, designer, salesman, and maintenance engineer for over 39 years, has been engaged by the Morton Salt Co., 120 South LaSalle St., Chicago, Ill. He will specialize in the fields of corrosion problems pertaining to base exchange water softening and other problems in this field of water treatment. Mr. Olson will be available for consultation on any new projects or any problems in connection with this phase.

Harald M. Olson

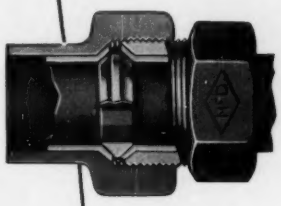
ICE AND SNOW CONTROL

CHEMICAL SPREADER

Clear chemicals are *cheap* and *effective* when applied with a "Scotchman". Used on dump trucks or pick-ups. Removable in three minutes. Bagged or bulk materials. Filtered air cools enclosed engine. Pushbutton starting and lights. Accurate control of application rate saves material. Instant control of width and direction of spread. Self-leveling. Stainless steel.

TARRANT MFG. CO.
East Avenue Saratoga Springs, N. Y.

COPPER SERVICE PIPE *Coupling*



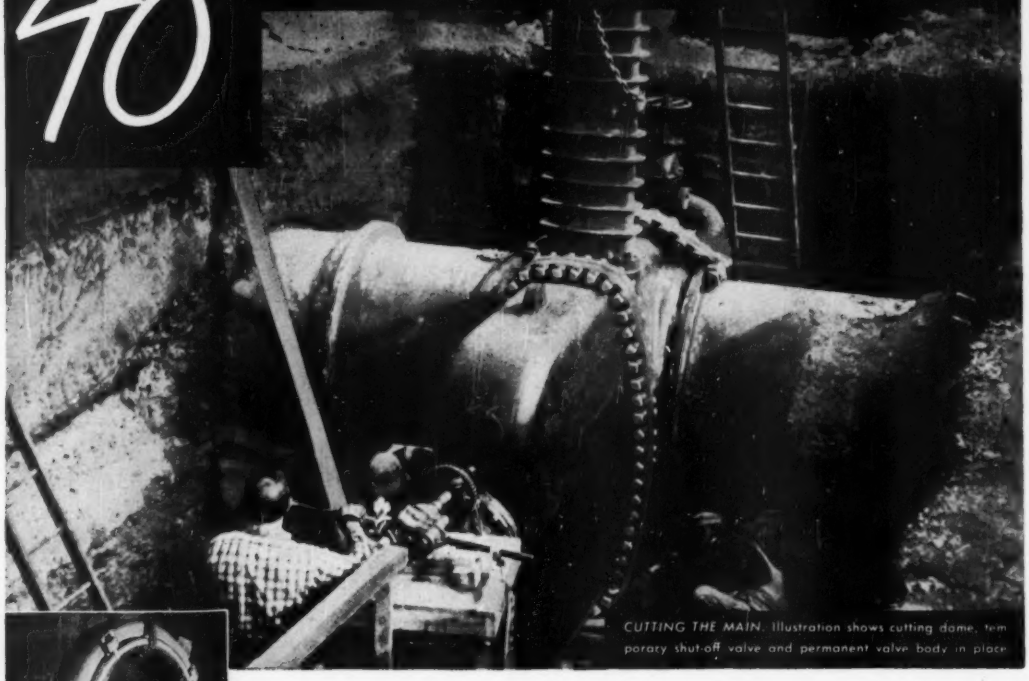
a "Diamond Line" Product

Here is another of the famous Diamond Line waterworks items which is continuing McDonald's reputation for the best in quality, service and dependability—a reputation that has been known to the trade since 1856. Plate E-4756, Copper Service pipe Coupling for copper service pipe at both ends. Made with a Double Taper Cone—between the stud and coupling nut. In sizes ½, ¾, 1, 1¼, 1½ and 2 inches. Also available are couplings having both male and female iron pipe. Write for complete information on all items in McDonald's Diamond Line.

EST. 1856 McDonald

A. Y. McDONALD MFG. CO.
DUBUQUE, IOWA
BRASS GOODS • PUMPS • OIL EQUIPMENT

*48" GATE VALVE INSERTED UNDER PRESSURE
to Avoid Stoppage of Steel Production



CUTTING THE MAIN. Illustration shows cutting dome, temporary shut-off valve and permanent valve body in place

Section removed from main

Finished insertion

At a large Eastern steel mill uninterrupted production depended upon a thirty year old, 48" cast iron main, carrying sea water used for cooling the furnace jackets. The main was in poor condition — badly corroded and electrolytically pitted.

In order to provide an emergency by-pass in the event of line failure, a gate valve was required. Since the mill could not risk even a momentary shut down, Smith was asked to insert the valve under pressure. Although of unprecedented size, the insertion was completed in four days without interruption of service or reduction in pressure.

*First 48" insertion ever made under pressure. One month later a second 48" gate valve was inserted by Smith for the Water Bureau, Philadelphia, Pa.

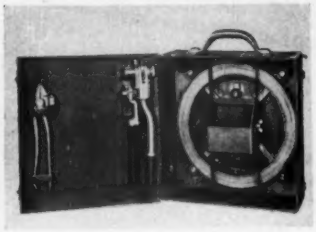
29

GATE VALVES
CHECK VALVES
FIRE HYDRANTS
INSERTING VALVES
TAPPING SLEEVES AND VALVES
WATER SERVICE BRASS GOODS

THE A. P. SMITH MFG. CO.
ESTABLISHED 1896
EAST ORANGE, NEW JERSEY

FLOOR STANDS
INDICATOR POSTS
TAPPING MACHINES
INSERTING MACHINES
PIPE CUTTING MACHINES
CORPORATION TAPPING MACHINES

Kit for Binding Signs To Standards



A. J. Gerrard & Co., 221 N. LaSalle St., Chicago 1, Ill., manufactures a steel-binder strapping kit for attaching traffic signs, highway signs, and street name plates to any type of pole or standard. A single length of corrosion-resistant strap binds the sign as permanently as special brackets at a very small cost.

For use on cement, steel, or wood standards, whether the pole is round, square, octagonal, or irregular, plain or fluted surface, the complete kit consists of a hammer cutter, a steelbinder strapping tool, a coil of strap, and a supply of steelbinder seals in a kit that is 14 inches high, 12 inches wide, and 5 inches thick. For special climatic or chemical conditions, the strapping and seals may be obtained in such varied metals as galvanized, monel, stainless steel, copperclad, and aluminum.

Foster Trailer Co. Appoints Sales Heads

Walter W. Harvey and Conrad P. Herman have been appointed sales managers for the Foster Trailer Co., Los Angeles, Calif., manufacturer of tilt-type trailers.

Mr. Harvey will be in charge of retail sales. Mr. Herman will be national sales manager for distributors and dealers.

Volunteer Firemen's Home Receiver

To meet the demand for a means of rapidly calling into action either reserve or volunteer firemen, Motorola, Inc., 4545 W. Augusta, Chicago 51, Ill., has developed a home receiver unit incorporating the new Motorola Quik-Call selective-calling unit, which insures absolute silence in the receiver at all times by locking out everything except the desired message, so that the receiver under operating conditions remains on standby 24 hours a day while staying silent until a message is dispatched.

Operating in the 152-162-mc band on a.c. power with a 17-inch wire antenna mounted on the roof and all controls mounted on the front panel, the receiver makes it possible to round up the department for action on a moment's notice without valuable time lost in phoning each man individually.

By means of the Quik-Call system, the dispatcher at headquarters may activate all receivers simultaneously or call any single receiver of his choice. When the dispatcher transmits a message, the home receiver comes on and the message is heard in the home. After the message is given, the receiver remains on and squelch noise is heard continuously until the person called goes to the receiver and turns it off manually. In the event that any member of the department is not at home when called, he returns to find the receiver on and squelch noise coming through the speaker, informing him of the call made in his absence so that he can communicate with headquarters for information or instructions.

Analysis Indicates Necessity of Doubled Telephone Facilities

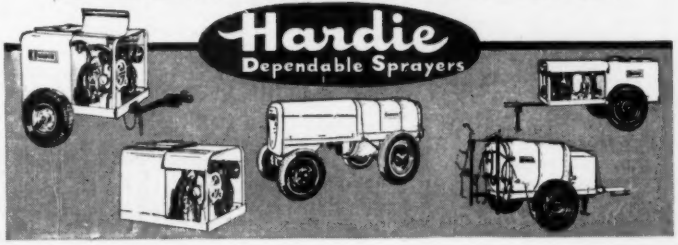
An analysis of incoming telephone calls indicative of the growth of business caused the United States Testing Co., Inc., Hoboken, N. J., to double its telephone facilities, according to H. M. Block, vice-president.

The increased business activities, measuring about 45% of 1948 as compared with the previous year, closely paralleled the increase in research and test projects, and the increased dollar volume. In addition to over 42,000 calls made during the year, the company received at its laboratory close to 7,000 personal visits from persons interested in inspecting the existing facilities.

Write for your copy

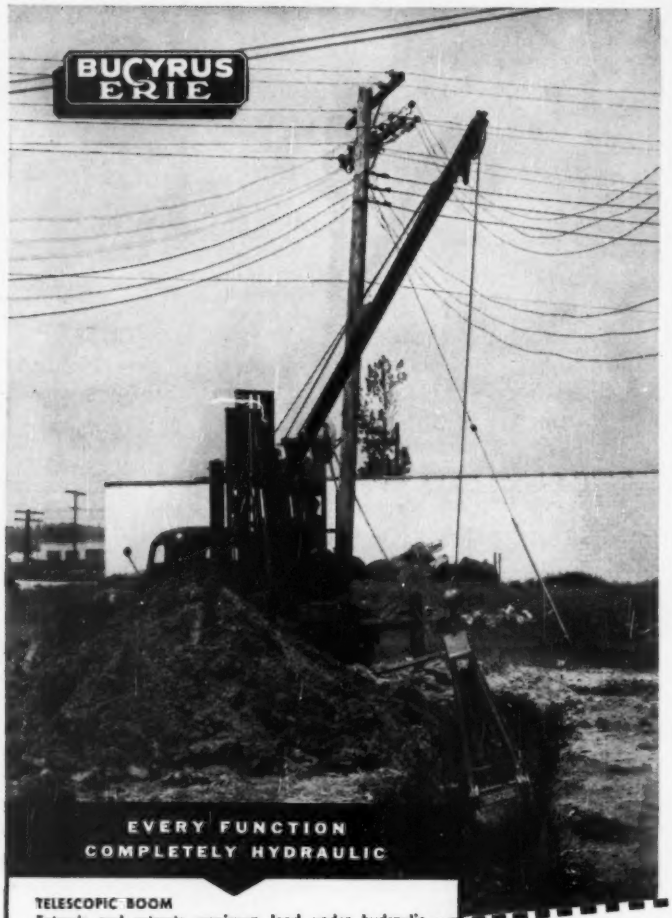
THE 1949 Hardie Catalog reveals many new and advanced features in the design and construction of High Pressure Sprayers. Shade tree pest control and the various other requirements which demand a high pressure sprayer today in forestry, park and public works maintenance operations all can be efficiently carried out by the same Hardie unit. Hardie Specialized Spray Guns for long distance and close work, high and low pressure weed booms, and other inexpensive accessories easily attached enable any Hardie to do many different jobs, providing more utility value than ever before.

THE HARDIE MFG. COMPANY
Los Angeles 11, Calif. • Hudson, Mich. • Portland 9, Oregon
Export Dept., Detroit 26, Mich.
Canadian Office, Clarence W. Lewis & Son Ltd.—Grimsby, Ontario



THE HYDROCRANE

digs in everywhere



EVERY FUNCTION
COMPLETELY HYDRAULIC

TELESCOPIC BOOM
Extends and retracts maximum load under hydraulic power at any boom angle.

BOOM HOIST
Boom raises and lowers hydraulically.

HOIST LINE
Load is raised or lowered hydraulically — no foot brakes.

SETS OUTRIGGERS
Outriggers are extended or retracted hydraulically in a matter of seconds.

REVOLVES 370°
Swings in either direction under hydraulic power.

CLAMSHELL BUCKET
Hydraulic ram within the bucket itself gives tremendous digging power.

Put the Bucyrus-Erie Hydrocrane to work for just one week and you'll agree it's the most useful rig you've ever used. Here's why users like it so well:

So Many Jobs

Digging ditches . . . laying pipe . . . removing snow . . . placing road forms . . . cleaning catch basins . . . erecting signs . . . handling concrete . . . landscaping . . . loading trash . . . erecting structures . . . there's no end of jobs this versatile crane-excavator can do.

Goes Anywhere

Because it's mounted on a truck, the Hydrocrane gets around in a big hurry — moves from one job to another in a fraction of the time an ordinary crane requires. Compact—squeezes into spots no other crane can approach—handles jobs no other outfit even attempts.

Costs Less To Run — To Operate

No clutches, drums, sprockets, gears, brakes — hundreds of conventional wearing parts are eliminated. Just one engine powers both the truck and crane. No hand-foot coordination needed . . . operators become skilled fast. Hydrocrane simplicity means low original cost . . . low upkeep, easy maintenance.

2-ton (¼-yard) and 3-ton (⅜-yard) models available. Act now while deliveries are prompt. Send in the coupon today.

MAIL THIS COUPON TO:

BUCYRUS-ERIE, HYDROCRANE DIVISION
7923 W. Greenfield Ave., Milwaukee 14, Wis.

NAME..... TITLE.....

COMPANY OR DEPT.....

ADDRESS..... STATE.....

CITY.....

12H48

BUCYRUS-ERIE HYDROCRANE DIVISION
7923 W. GREENFIELD AVE., MILWAUKEE 14, WIS.

New Galion Scoop Loader

A new front-end loader attachment is being manufactured by the Galion Iron Works & Mfg. Co., Galion, Ohio, manufacturers of motor graders and rollers.

Designed for quick attachment to the Galion No. 402 maintenance motor

grader, lifting operation is by hydraulic power under finger-tip control from the grader seat. Operation is independent of scarifier, and the loaded bucket is tripped by manual cable control.

With the Galion loader it is possible to windrow dirt or snow, scoop it up, and load it on trucks in one continuous operation, thus cutting down idle time while accomplishing work ordinarily requiring a separate piece of equipment.

The loader, which handles sand, cinders, and other material from stock piles, has a bucket of 9 cubic feet (an extra-large snow bucket is also available), lifts to a height of 9 feet 10 inches, has an 8 foot dumping clearance, and permits a forward reach of 4½ feet.

New Verticlosed Pump Motor From U. S. Electrical Motors

A new development in deep well vertical pump motors, the Verticlosed Streamway motor, embodies several new features and is designed for application to practically all types of turbine pumps.

Completely streamlined, the motor has an interchangeable base to permit the increase or decrease in horsepower without the expense of re-machining or exchanging the pump head. A waterproof housing protects vital parts of the motor from injurious weather conditions. Downdraft ventilation prevents re-entry of expelled hot air by blasting the air for about 5 diameters away from the motor.

Standard models are provided with reverse protection clutch; a special non-reversing locking device is available.

The motors are manufactured by the U. S. Electrical Motors, Inc., at 200 E. Slauson Ave., Los Angeles 54, Calif.

Four-Color Pencil Speeds Work

In any municipal department reuqiring checking and notations, the Norma four-color automatic pencil speeds work. Within the pencil are four barrels that hold the different colors of lead. A flick of the finger makes the switch from one color to the other.

The manufacturer is the Norma Pencil Corp., New York, N. Y.

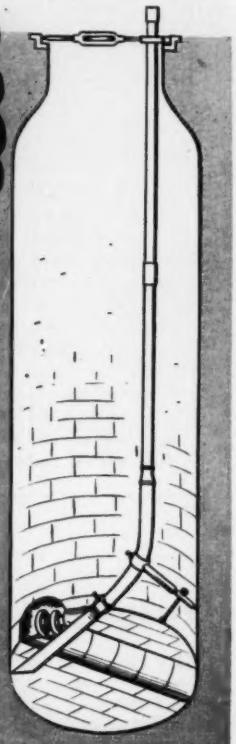
NEW—"FLEXIBLE" LOWER MANHOLE JACKS

SAVE TIME AND WORK AND EQUIPMENT

"FLEXIBLE" experience again provides new methods of simplifying tough jobs. These two new Lower Manhole Jacks brings sewer and line cleaning operations another step further into the open. They also speed tool changing. Note how the coupled rod guide is quickly, firmly, simply anchored at the bottom of the manhole. Also note that the face of the bell is held away from the lip of the sewer line itself. This enables operators to see roots before they jam tight in the rod guide.

Adjustable Back Jack (Optional use). Perfect for getting additional anchorage of rod guide. Sold separately.

Adjustable Foot Jack. Ideal for use with proven "Flexible" Steel Rod system of cleaning sewer lines. Sold separately.



Lower Manhole Jacks in position. Clear working face of sewer is provided as well as comfortably small amount of rod bend into sewer line.

ASK YOUR NEAREST "FLEXIBLE" OFFICE TODAY FOR FULL INFORMATION

FLEXIBLE SEWER-ROD EQUIPMENT CO.

9059 Venice Blvd., Los Angeles 34, California

141 W. Jackson Blvd. Chicago, Ill.
401 Broadway New York 13
147 Hillside Ter. Irvington, N. J.
P. O. Box 165 Atlanta
2011 Central Ave. Memphis, Tenn.
801 E. Excelsoir Blvd. Hopkins, Minn.
29 Cordan Ave. Roslindale 31, Mass.
P. O. Box 447 Lancaster, Texas
41 Greenway St. Hamden, Conn.
3786 Durango Ave. Los Angeles 34, Calif.
909 N. Homewood Ave Pittsburgh 8, Pa.
4455 S.E. 24th Ave. Portland 2, Ore.

The Sidewalks of New York COVER HUNDREDS OF MILES OF CLAY PIPE

One of New York's latest projects is the enlargement of subway stations on the 4th Avenue line. City Engineers helped relocate city sewer lines to make room for bigger stations, specifying larger Clay Pipe lines where they were needed. Where the lines were to remain the same size in their new locations, the *original Clay Pipe* was used again.

CLAY PIPE NEVER WEARS OUT!

When Lawler and Blake wrote their famous song, "The Sidewalks of New York," in 1894, they didn't say anything about Vitrified Clay Pipe. Nevertheless, Vitrified Clay Pipe was there — it was underneath those sidewalks, an *unseen servant* of 2½ million people! And that same Clay Pipe, along with hundreds of miles of additional Clay Pipe sewers, is still serving New York's near eight million people.

THERE ARE NO EXCEPTIONS TO CLAY PIPE'S LIFE SERVICE

Clay Pipe gives *lifetime service under any kind of waste disposal or soil conditions!* Chemically inert from the very beginning, selected clays are *heat-bonded at controlled fusing temperatures* into permanent, durable, rust-proof and corrosion-proof Clay Pipe! Generations of faithful, trouble-free service everywhere prove the fact that engineers need make no exceptions to Clay Pipe's life service when they specify this material.

If You Need Specific Information on a Clay Pipe Question, Write the Details to the Office Nearest You

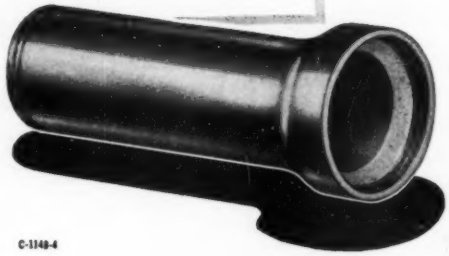
NATIONAL CLAY PIPE MANUFACTURERS, INC.

100 N. LaSalle St., Rm. 2100
Chicago 2, Ill.

522 First National Bank Bldg.
Atlanta 3, Ga.

703 Ninth and Hill Bldg.
Los Angeles 15, Calif.

1105 Huntington Bank Bldg.
Columbus 15, Ohio



Vitrified CLAY PIPE

C-1148-4

New Small Snow Loader

Loading a five-cubic-yard truck in one minute, the Model 522 snow loader made by the Barber-Greene Co., Aurora, Ill., is one-man operated, and self-feeding; it can also be converted for all-year-round bucket loading for a variety of bulk loading applications.

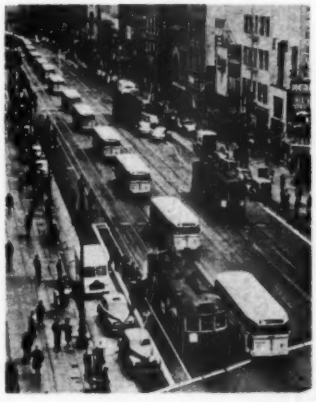
Low clearance is a feature of the new machine, as well as its portability and maneuverability. It has automatic overload release, floating boom, individual steering and crowding clutches, and a spiral feeding device for capacity loading and breaking of lumps and ice.

Barnthouse Leaves Elgin

C. W. Barnthouse has resigned as vice-president and sales manager of The Elgin Corp., 501 Fifth Ave., New York, N. Y., after 28 years of sales work in the municipal and selling fields.

"Barney," as he is regularly known to a host of friends, spent most of his time as a distributor (20 years) in Ohio, Mich., and Kentucky, plus 8 years in Chicago. He has not as yet announced his future plans but he can be reached at 2242 Chestnut Ave., Wilmette, Ill.

New Bus Fleet Serves San Francisco



Some White Super Power coaches, manufactured by The White Motor Co., Cleveland 1, Ohio, have been purchased by the city of San Francisco. The coaches seat 44 passengers, are powered by 210-hp White underfloor 12-cylinder engines designed for fast pick-up and easy ascension of grades.

Stuart Continues Distribution For Palmer Filter

The Stuart Corp., 516 N. Charles St., Baltimore 1, Md., has been reappointed national distributors for the Palmer surface wash system, manufactured by the Palmer Filter Equipment Co., Erie, Pa. Stuart has reappointed the following sales agencies for this equipment:

Infilco, Inc., Chicago, Ill.
Roberts Filter Mfg. Co., Darby, Pa.
E. W. Bacharach & Co., Kansas City, Mo.
Cochrane Corp., Philadelphia, Pa.
W. D. Taulman & Associates, Atlanta, Ga.
Sherman Machine & Iron Works, Oklahoma City, Okla.
Builders-Providence, Inc., Providence, R. I.
The Refinite Corp., Omaha, Nebr.
Liquid Conditioning Corp., Linden, N. J.

The filter wash is particularly valuable in keeping the filter bed clean and free of mud-balls and preventing carbonaceous coatings on the sand particles. Its use makes filter back-washing much simpler and cuts the excessive wash water requirement in this process.

Another **"Warren Pipe"** line soon to be paying dividends to its owners through years of carefree service — buried and in service, it's the "forgotten man" of your water system, on duty 24 hours each day, year after year.

Warren cast iron pipe and fittings can be supplied in sizes 2" to 84" with all types of joints and in accordance with standard specifications.

CAST IRON PIPE **CAST IRON PIPE FITTINGS**

GREY IRON CASTINGS

SPECIFY "WARREN PIPE"

WARREN FOUNDRY & PIPE CORPORATION
11 BROADWAY, NEW YORK, N. Y.

WARREN PIPE COMPANY OF MASS., INC.
75 FEDERAL ST., BOSTON, MASS.

Leading a SOFT life!

This city, nestled in soft water, enjoys a life of luxury. Soft water adds to people's comfort and lightens their daily chores. And it means important savings for every home: clothes (washed in soft water) last longer; savings on soap are large; fuel and repair bills are reduced.

Every city likes to attract new industries. Factories naturally choose towns where the water is good, for soft water speeds up production, lowers operating costs, and raises product quality.

How about *your* water supply? Can you benefit by soft water? If so, why not let Permutit's* long experience and full line of modern Water Conditioning Equipment provide you with the chemically correct water which best meets your needs. Write for full information to the Permutit Company, Dept. A-1, 330 West 42nd Street, New York 18, N. Y., or to the Permutit Company of Canada, Ltd., Montreal.

*Trade-mark Reg. U. S. Pat. Off.

FOR 35 YEARS WATER CONDITIONING HEADQUARTERS

Permutit

Protect Asphalt Surfacing

Since paving materials deteriorate quite rapidly when subjected to the action of sunlight, water, and gasoline and oil drippings, absorbed by the pavement, a substance which seals these surfaces against such deteriorating influences offers an inexpensive way of maintaining paving. Jennite, which is itself immune to these factors, lengthens the life of either old or new surfaces. Manufactured by Maintenance, Inc., Wooster, Ohio, Jennite is applied just as it comes from the package and will bond to any clean surface.

Wheeler Joins Drilling Corporation

Girard Wheeler, principal geologist and formerly chief of the subsurface exploration section of the New York City Department of Public Works, has joined the staff of the Giles Drilling Corp., 2 Park Ave., New York City. Dr. Wheeler formerly taught engineering geology at Rutgers University.

The Giles Corp. is jointly owned by Spencer, White and Prentis, engineers and contractors, and Western Foundation Corp.; both are specialists in subsurface work.

Giles' work includes all forms of subsurface exploration, such as test pits, load tests, undisturbed and dry sample test borings, diamond core borings, water pressure testing for dam sites, and similar work. The corporation's clients include various cities, water supplies, state organizations, and the U. S. Army Engineers.

Road-Sweeping Magnets Make Streets Tire-Safe

The Dings high-intensity road-sweeping magnet, manufactured by the Dings Magnetic Separator Co., 4740 W. McGeogh Ave., Milwaukee 14, Wis., is designed for mounting on a truck with power supply from a portable engine-generator set.

Picking up from 5 to 25 pounds of metallic objects per mile of roads, airfield landing strips and aprons, or pick-up areas, the mechanism has a magnetic pick-up effective to about 12 inches from the magnet face. Available in lengths of 36, 48, 60, 72, 84, and 96 inches, the unit covers between 10 and 40 miles per day.

The Dings high-intensity road-sweeping magnet, attached to a truck, is at work removing the hazards of pieces of sharp metal lying on the road.

City of Silverton Seeks Qualified Manager

APPLICATIONS for the position of City Manager are being accepted by the Council of the City of Silverton, Oregon. The city owns and operates its own light and water systems; has a population of approximately 3000.

The salary for the position is $4100.00.

Application may be made to

Hon. C. H. Dickerson, Mayor

City Hall

Silverton, Oregon

EVEN HARD-FROZEN
ICE
WON'T BALK A
NELSON SNOW LOADER
Nelson R-10 Snow Loader clearing hard snowbanks on narrow city street

. . . IT PICKS BEFORE IT SHOVELS!

Ice storms, quick freeze-ups, hardened snowbanks — these snow-clearance headaches are routine, short-order jobs for a Nelson Snow Loader. That's because a Nelson is no mere "conveyor." *It picks before it shovels.* Steel-toothed, renewable blades dig deep and close, quickly get rid of frozen snow.

A Nelson is easy on pavement; operator has close control of depth of cut. Hydraulic hoist and a Nelson's agility in traffic are other features you'll like.

And a Nelson is useful all year 'round. It handles coal or cinders without a change. A Nelson bucket boom, separately available, speedily converts it into a rugged loader for road or pit, handling earth, sand or broken stone.

Get the facts and costs on the Nelson—and by all means see it perform—before you invest in a snow loader. Thrifty "Utility" and big "Heavy-Duty" sizes. Write for new bulletin.

NELSON

N. P. NELSON IRON WORKS, INC.
CLIFTON, NEW JERSEY · Truck Loaders Since 1917

NOW...

only ripples of OFFICE sound

for municipal offices . . . In the new Remington Rand electric adding machine, cushioned power gives welcome relief from harsh office clatter. You'll turn out more work with new ease on this quieter, faster model—with its longer, streamlined motor bars and famous 10-key touch-control keyboard. All feature keys are electrified—you add, subtract, multiply directly—as fast as your fingers will move. For full details, call your local Remington Rand representative.

Cushioned Power: Built-in steel cushions reduce noise and vibration—lessen strain on moving parts—insure smoother operation and longer life.

Streamlined Action: Longer, feather-touch motor bars and compact 10-key keyboard eliminate finger groping, speed every operation. Completely electrified.

Free Booklet: Write today for "Ripples of Sound," Remington Rand Inc., Dept. AC-1, 315 Fourth Avenue, New York 10, N. Y.

the new "93" Remington Rand electric adding machine

Asphalt Institute Elects Angell

N. H. Angell, of the Standard Oil Co. of California, San Francisco, has been elected president and chairman of the executive committee of The Asphalt Institute, 801 Second Ave., New York 17, N. Y.; the committee is completed by Sidnew Goldin, Shell Oil Co., Inc., New York, D. H. Jenks, Jr., Ashland Oil & Refining Co., Ashland, Ky., E. E. Scholer, Shell Oil Co, Inc., St. Louis, Mo., O. D. Bridges, Houston, Texas, and W. L. Spencer, Union Oil Co. of California, Los Angeles.

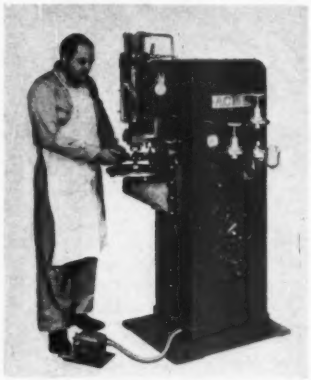
N. H. Angell

Bernard E. Gray was re-elected general manager-chief engineer, and Herbert Spencer, secretary of the Institute. George R. Christie and John N. Smith, both of the Socony-Vacuum Oil Co., Inc., were elected treasurer and assistant treasurer, respectively.

McGehee Returns to Truscon

After a year's leave of absence, C. B. McGehee has returned to the Truscon Steel Co., Youngstown, Ohio, resuming his former position as general manager of sales.

New Welding Machine For Light Jobs



The PT-O being used as a projection welder, with a two-stage toe-operated foot switch.

The Acme Electric Welder Co., 2618 Fruitland Rd., Los Angeles 11, Calif., is manufacturing a new projection welder designed for speedy, economical operation on light jobs. The PT-O is air-operated, press type, with direct-action projection available in 20, 30, or 40 kva. Horn adapters and horns to convert for conventional spot welding may be obtained.

• NEW MATERIAL!

• SUBSTANTIAL SAVINGS!

• IMMEDIATE DELIVERY!

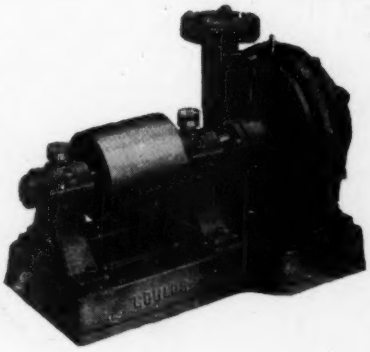
New Crane, Figure 461 8", Flanged End, Non-rising Stem, Gate Valves.

$85.00 EACH

10 PERCENT DISCOUNT IN LOTS OF 12

New Gould Centrifugal Pumps. 3" Suction, 2" Discharge. Fig. 3610, Size 2c. Mounted on cast iron base.

$75.00 EACH



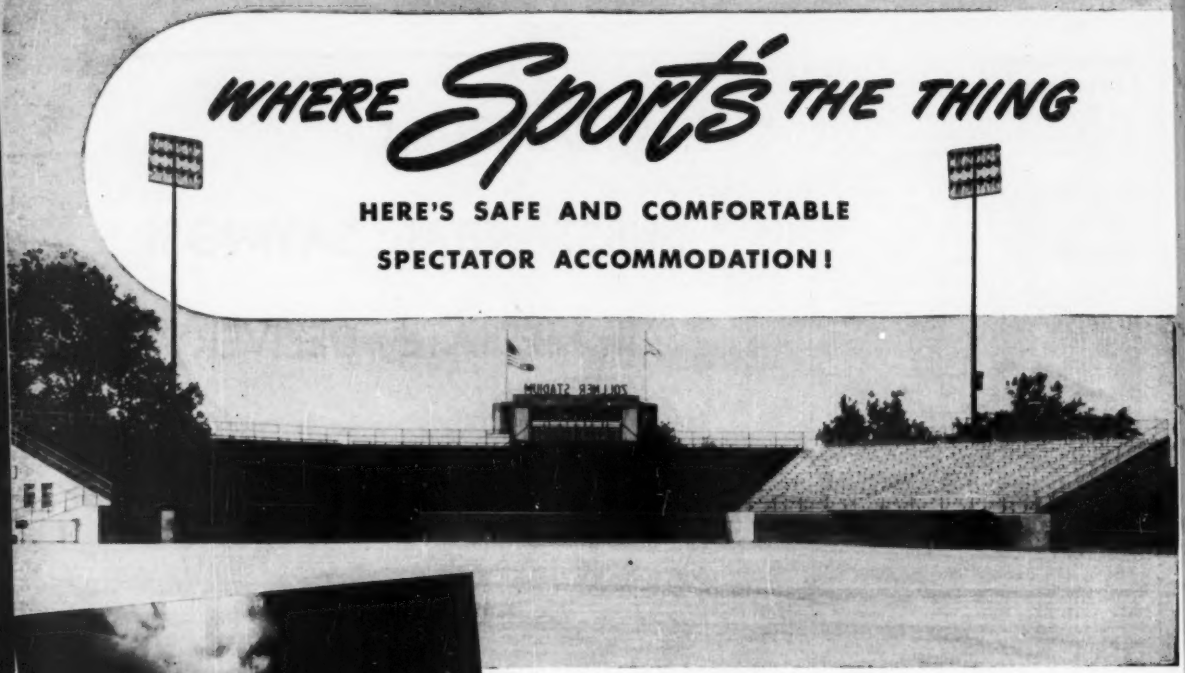
CALL — WIRE — WRITE

Al Brown Supply Company

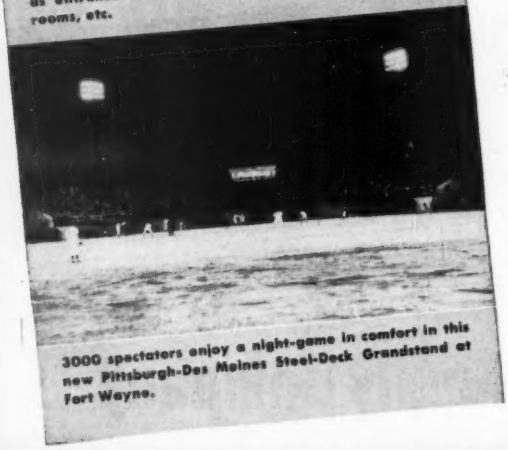
BOX 841 KILGORE, TEXAS PHONE 789

WHERE Sports THE THING

HERE'S SAFE AND COMFORTABLE SPECTATOR ACCOMMODATION!



The weather-tight deck of Pittsburgh-Des Moines Steel-Deck Grandstands permits use of the underdeck areas as entrance lobbies, offices, dressing rooms, storage rooms, etc.



3000 spectators enjoy a night-game in comfort in this new Pittsburgh-Des Moines Steel-Deck Grandstand at Fort Wayne.

PITTSBURGH •DES MOINES *Steel Deck* GRANDSTANDS

This handsome soft-ball stadium, recently erected at the Zollner Machine Works athletic field in Fort Wayne, indicates the wide applications of Pittsburgh-Des Moines Steel-Deck Grandstands for municipal and industrial spectator-sports requirements.

As is the case with our school and college installations throughout the country, the Stand is of unitized steel construction—a feature permitting *complete freedom for the designer in type, capacity, and future extension.* Our Grandstand Brochure gives full details—write for your copy!

PITTSBURGH • DES MOINES STEEL CO.

Plants at PITTSBURGH, DES MOINES and SANTA CLARA

Sales Offices at:

PITTSBURGH	3412 Neville Island	DES MOINES	913 Tuttle Street
NEW YORK	Room 915, 270 Broadway	DALLAS	1217 Praetorian Bldg.
CHICAGO	1216 First National Bank Bldg.	SEATTLE	920 Lane Street
SANTA CLARA, CAL.	619 Alviso Road		

Wallace and Tiernan Reach 35-Year Mark

Our readers who noticed page 197 of the December issue, reporting the founding and growth of the Wallace & Tiernan Co., Inc., Newark, N. J., will be interested to see the first chlorinator built by the two founders of the company, and the 1948 chlorinator. Charles Frederick Wallace (left), and Martin F. Tiernan started the organization in November 1913.

Wiggers, Gilbertson Appointments

Raymond P. Wiggers has been appointed advertising manager of The Frank G. Hough Co., Libertyville, Ill., manufacturers of road-building and material-handling equipment.

Mr. Wiggers was formerly with the Towmotor Corp and the Parker Appliance Corp., both of Cleveland, Ohio.

G. A. Gilbertson, who recently resigned as assistant sales manager of the industrial power division of the International Harvester Co, is joining Hough as vice-president.

New Distributors For Pipeline Instruments

F. R Gibb, president of Water Leak Detector Co., Columbus, Ohio, has announced the appointment of the Leak Detector Co., 330 Bulkley Bldg., Cleveland 15, Ohio, as sole distributors of Universal leak detectors and pipe locators.

The Leak Detector Co. is affiliated with Control, Inc., Cleveland 15, Ohio, and other organizations specializing in corrosion control, submarine coatings, cathodic protection, and electrolytic descaling.

Syntron Appointments In Sales Departments

The Syntron Co., Homer City, Pa., manufacturers of vibratory material handling equipment and power tools, has made the following appointments in their sales department:

Mark Chisholm has been appointed district sales manager of the newly established sales office in Des Moines, Iowa.

Ernest K. Hood, in the new sales office in Kansas City, Mo.

R. K. Bentzien, to the Milwaukee, Wis., sales-office staff. He will take charge of the power-tool and paper-jogger sales.

ZERO-LASTIC
Sealing Compound

Zero-Lastic Oil Resisting Compound.

Zero-Lastic Oil Resisting Joint Material for Airports.

Zero-Lastic Vertical Joint Filler.

Zero-Lastic Sloping Joint Filler.

Zero-Lastic Compound meeting Federal Specifications. SS-F-336a, put up in 50 lb., 25 lb. and 10 lb. packages.

Zero-Lastic Hair-Line Crack Filler.

Write for prices on these materials for Municipal and Public Work.

Rubberized Oil Plastics, Inc.

82 West Washington St.,

Chicago 2, Illinois

"GUNITE" SWIMMING POOL

The 90' x 225' all "GUNITE" swimming pool and wading pool pictured above is at Palmerton, Penna. This municipal pool was built by us last fall in accordance with our design and is similar to many others we have designed and built in the past.

"GUNITE" is adaptable for several types of private and public pools and offers advantages of complete watertightness, freedom from maintenance expense and low initial cost.

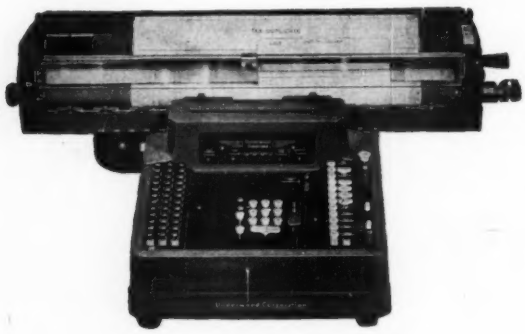
If you plan to build a swimming pool we will be pleased to submit designs and estimates.

Our 64-page bulletin D2400 illustrates pool construction and scores of other uses of "GUNITE." Write for your free copy.

CEMENT GUN COMPANY
"GUNITE" CONTRACTORS
GENERAL OFFICES—ALLENTOWN, PENNA., U.S.A.

SAY WHEN

- ☐ When your tax billing job is a headache
- ☐ When the Assessor is late with his Assessment Roll
- ☐ When John Jones' valuation gets entered opposite Mary Smith's property
- ☐ When you find or believe that some properties have been missed.
- ☐ When the tax bills are not ready on the billing date
- ☐ When John Jones' tax gets extended on somebody else's line
- ☐ When the queue at your Cashier's window is slow moving
- ☐ When the amount on his bill is different from his amount on the Tax Roll
- ☐ When you can't tell John Jones offhand how much, if any, delinquent tax there is on his property
- ☐ When outstanding taxes are not decreasing



Underwood Sundstrand Municipal Accounting Machine can help your Municipality.

Let us send you the particulars.

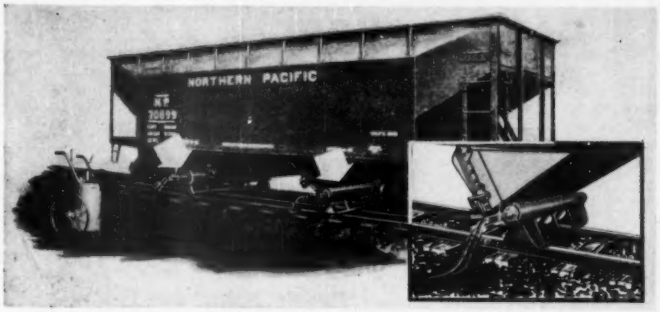
UNDERWOOD CORPORATION

Accounting Machines . . . Typewriters . . . Adding Machines . . . Ribbons, Carbon Papers and other Supplies

One Park Avenue — **New York 16, N. Y.**

Sales and Service Everywhere

Unload Frozen Coal Cars



The burners require compressed air at a pressure of 40 to 120 pounds per square inch with a volume of 10 cfm per burner, and the burner uses fuel oil Nos. 1, 2, or 3, kerosene, or distillate at the rate of 1½ to 6 gallons per hour.

The job of unloading frozen coal cars when the thermometer drops below 30° is no problem with the portable coal car thawing tube equipment, made by the Hauck Mfg. Co., 112-122 10th St., Brooklyn 15, N. Y.

The heating burners are of a suction-atomizing type built without coils; they require no preheating to start. Operating smoothly and steadily without ups and downs, these units, which cannot clog from carbon, are recommended where compressed air pressure is available for its operation.

The No. 77 portable steel thawing tubes come on runners, and the No. 650 double venturi suction torch equipment, with two 18-foot lengths each of oil and air hose and one 20-gallon fuel tank, comes on roller bearing wheels.

Generating a series of smokeless, intense, heating flames, the equipment thaws sufficiently for dumping a frozen two-hopper coal car in ½ to ¾ hour. The heat regulation is under constant control of the operator, and there is no installation expense: simply connect to the compressed air line, fill the fuel tank, and the equipment is ready.

The heating tubes deliver an evenly-distributed wide spread of intense heat along the entire width of the hopper doors.

Ryerson's New L. A. Manager

C. H. Hallett has been appointed manager of sales at the Los Angeles plant of Joseph T. Ryerson & Son, Inc., Box 8000-A, Chicago 80, Ill., steel distributors.

C. H. Hallett

Mr. Hallett first became associated with Ryerson in 1941, serving first in various departments in the Buffalo plant, later at Chicago as assistant to the sales manager.

Clean Oil Saves Money

A central coolant clarification system is saving considerable amounts of money for several firms. Applicable to power installations as well as in industrial and marine fields, the system has already resulted in a saving of more than $30,000 for one organization: a $12,000 saving in labor and an $18,000 saving in soluble oil costs. "Clean Oil" a booklet describing the system and how it works, may be obtained from the Honan-Crane Corp., 986 Sixth St., Lebanon, Ind.

Monroe FOLDING BANQUET TABLES

NO KNEE CONTACT

NON-TIPPING

New PEDESTAL TYPE

THE FOLDING TABLE WITHOUT LEGS

•

FOLDS THIN-2½ INCHES EASILY CARRIED

•

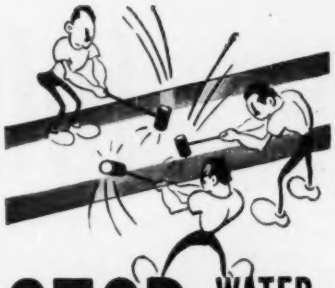
MONROE FOLDING BANQUET TABLES are ideal for City Parks, Fire Departments, Armories, Coliseums, Auditoriums and other public buildings.

Write for literature, prices and discounts.

DESIGNED AND MANUFACTURED EXCLUSIVELY BY

THE Monroe COMPANY INC.

99 CHURCH STREET COLFAX, IOWA



STOP WATER HAMMER

The Williams-Hager Flanged Silent Check Valve is available for every service . . . bodies of Iron, Semi-Steel, Cast Steel, Government Bronze, Stainless Steel or Monel Metal . . . fitted with seats and discs of either Government Bronze, Stainless Steel or Monel. Standard sizes from 1 inch to 20 inches. *Write for new technical bulletin.*

THE WILLIAMS GAUGE CO.

Pump Valves . . . Water Gauges . . . Gauge Cocks . . . Steam Traps . . . Pump Governors . . . Feed Water Regulators . . . Water Columns

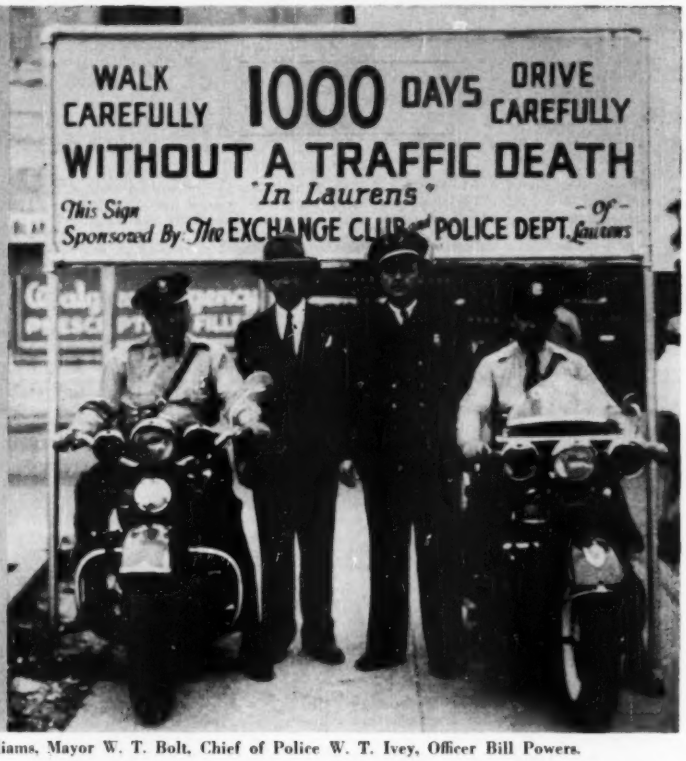
3013 PENNSYLVANIA AVE. • PITTSBURGH (12), PA.

1000 DAYS WITHOUT A TRAFFIC FATALITY!

"From 1940 to 1946 We Had 13 Traffic Fatalities. We put motorcycles on in the spring of 1946. No traffic fatalities since".

W. T. Ivey

Chief of Police


WALK CAREFULLY
1000 DAYS
DRIVE CAREFULLY
WITHOUT A TRAFFIC DEATH
"In Laurens"
This Sign Sponsored By The EXCHANGE CLUB and POLICE DEPT. of Laurens

Left to right: Officer Bob Williams, Mayor W. T. Bolt, Chief of Police W. T. Ivey, Officer Bill Powers.

Laurens, S. C. set amazing record of police efficiency

On October 11, 1948, police of Laurens established one of the most remarkable of all traffic control records . . . 1,000 successive days without a death due to traffic accidents! This record is especially noteworthy in that Laurens, a city of approximately 11,000 inhabitants, is situated in the heart of South Carolina's industrial and recreational region where cross-state traffic is always heavy. Nevertheless, Laurens' police force, small in number, but aided effectively by their Harley-Davidsons set an example of traffic law enforcement that has seldom been equalled. Their record is likewise a fine testimonial to the use of Harley-Davidson Motorcycles as vital aids in preventing traffic accidents and improving traffic control.

Your city also can benefit from the use of Harley-Davidson Police Motorcycles, Servi-Cars and sidecars. Ask your dealer for complete information.

HARLEY-DAVIDSON MOTOR COMPANY, Milwaukee 1, Wisconsin

HARLEY-DAVIDSON

MOTORCYCLES POLICE BETTER TRAFFIC CONTROL **SERVI-CARS**

Handwritten or Drawn Stencils

The A. B. Dick Co., 720 West Jackson Blvd., Chicago 6, Ill., has designed a new handwriting stencil sheet for the production of hand-written, free-hand illustrated, and lettered sheets. An advantage is that these may be filed and re-run if additional copies are needed.

Also available from the company are special stencil sheets for mimeographed bulletins, 4-page folders, and mailing list addresses.

Hall District Engineer For Portland Cement

John F. Hall has been appointed district engineer in charge of the New York office of the Portland Cement Assn., 35 W. Grand Ave., Chicago 10, Ill. Mr. Hall will direct field promotion in Connecticut, New York, and New Jersey. He succeeds E. M. Fleming, who has retired.

Dry-Chemical Truck for Airports

The first large fire truck to use dry chemical as the primary extinguishing agent is offered to airports by the Fire Extinguisher Division, Ansul Chemical Co., Marinette, Wis. Carrying 2,800 pounds of dry chemical and 250 gallons of water the vehicle weighs 21,500 pounds. It is 95¾ inches wide and 21½ feet long. Cab height is 8 feet, turret height 10½ feet. The truck has a four-wheel drive, five forward speeds and one reverse. Maximum governed speed is 62 mph. Four compartments on the sides of the truck house accessory fire-and-rescue equipment.

The four dualstream nozzles discharge dry chemical at the rate of 300 pounds per minute in either straight or fan streams. The turret nozzle discharges 600 pounds per minute in a very long-range and highly concentrated stream so as to penetrate deeply into the fire area. The 250 gallons of water is supplied to two 100-foot hose lines by a pump which will deliver 40 gpm at 145 pounds psi. The hose lines can be equipped either with water spray nozzles or mechanical foam playpipes.

Fast, Low Cost Clean-Up and Snow Removal . . .

LITTLE GIANT POWER SWEEPERS

Both tow-type and mounted front-end sweepers. For trucks, tractors and Jeeps. Operates from power take-off—wheel slippage cannot slow down the broom. ONE-MAN operation—no operating engineer required on the broom. Tested and proved—hundreds in use.

SNOW and BULLDOZER BLADE. Replaces brush—quickly attached.

SPRINKLER ATTACHMENT. Holds down the dust—sprinkles just ahead of the broom.

WRITE, stating make and model of truck, tractor or Jeep.

LITTLE GIANT PROD., INC.
1585 N. Adams St., Peoria, Ill.

How often are you refilling sweeper broom cores?

AFRICAN BASS FIBRES

INDIAN PALMYRA STALKS

Fresh, high quality fibres make a big difference in sweeper mileage you get between broom core refills. We are able to offer you the best fresh quality fibres in all types and sizes. Your inquiry will receive our prompt attention.

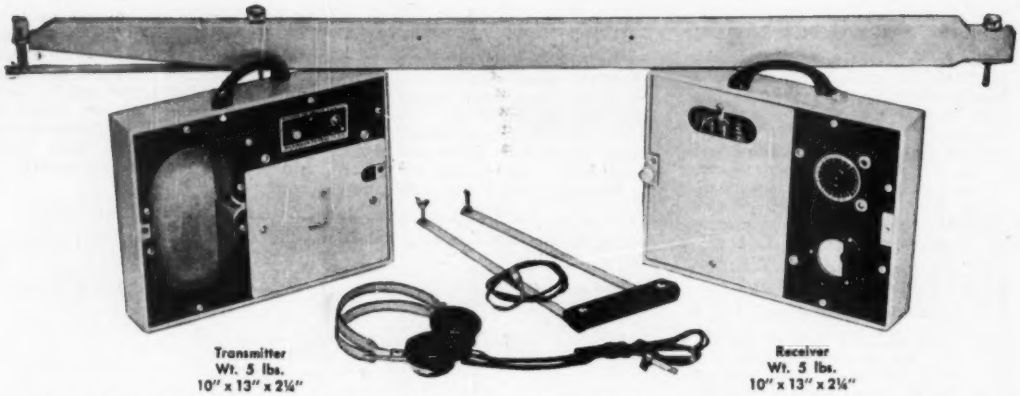
MOUNTAIN HICKORY SPLINTS

STEELWIRE CHINA SPLIT BAMBOO

The OTTO GERDAU CO.

Established 1872

82 Wall Street, New York 5, N.Y.



Transmitter
Wt. 5 lbs.
10" x 13" x 2¼"

Receiver
Wt. 5 lbs.
10" x 13" x 2¼"

This is the locator that has set new high standards for performance. This precision built instrument has been approved and is used by the Nation's largest utilities and municipalities. It is light but powerful—a simple, one-man tool that does EVERY job. Regardless of depth, no part of your underground pipe system can hide from this electronic sleuth. It does the job that stymies the ordinary device. Buy a **proven** professional instrument.

WILKINSON LINE LOCATOR

(Pat. Pending)

LIGHT • COMPACT • POWERFUL

Write for complete literature and prices

WILKINSON PRODUCTS CO.

P. O. Box 1774, Wilshire-La Brea Station
Los Angeles 36, Calif.

Originators of the light, compact, all-purpose underground locator.

Stop Leaks INSTANTLY with Stonhard Stontite

WATERPROOF
QUICK-POSITIVE

FOR RESERVOIRS, DAMS, BASEMENTS, SWIMMING POOLS, TUNNELS, PITS, AND FOUNDATIONS.

Anyone can stop any leak (from a gusher to a trickle) — instantly, simply and quickly by applying STONHARD STONTITE.

STONHARD COMPANY

Building Maintenance Materials

Serving the Municipalities, Railroads and Industry Since 1922

203 Stonhard Bldg., 1306 Spring Garden St. Phila., 23, Pa.

STONHARD COMPANY
203 Stonhard Bldg., 1306 Spring Garden Street, Philadelphia 23, Pa.
Send for details of Trial Offer and a Free Copy of "Stops Leaks Instantly."
Firm .....
Mr. ..... **Title** .....
Address .....
City ..... **Zone** ..... **State** .....

DO IN MINUTES WHAT NOW TAKES HOURS!

REMOVE SNOW QUICKLY AND EASILY....

THROW AWAY THAT SHOVEL-

ARIENS Tiller SNOW PLOW

NEW Revolutionary ROTARY PLOW!

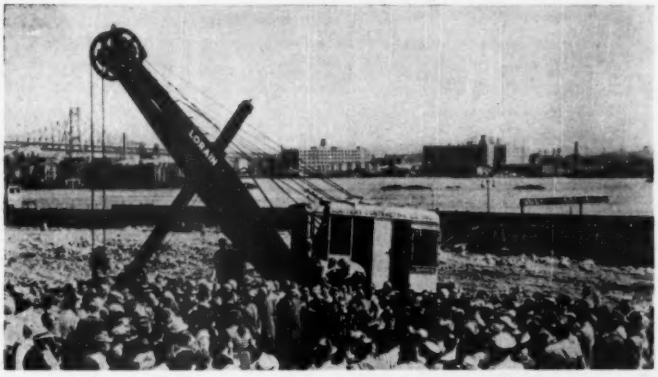
Here's a snow plow that actually removes snow . . . it doesn't push the snow over into another spot, particularly where drifts prevent shoving the snow. You have never seen anything like it for snow removal . . . removes snow up to 18 feet from the path . . . width of cut is 24 inches . . . maximum height of discharge spout 55 inches . . . discharge spout reversible so that snow may be blown to the right or left. Removes snow so quickly and easily that snow removal becomes a pleasure instead of a drudgery. Do in minutes what it takes hours to do otherwise.
Available without the tiller attachment, or where you have an ARIENS TILLER, this new rotary snow plow can be attached in 20 minutes.

THE ONLY PLOW THAT REMOVES SNOW FROM ALL AREAS-LARGE AND SMALL

Write for complete details.

ARIENS COMPANY **BRILLION WISCONSIN**

Lorain Shovel Breaks Ground for New UN Headquarters



The first shovel full of earth for the permanent home of the United Nations was dug recently on the Mid-Manhattan site overlooking the East River by a 2-yard Lorain power shovel, manufactured by The Thew Shovel Co., Lorain, Ohio. Acting Secretary-General Benjamin A. Cohen of the UN is shown at microphone.

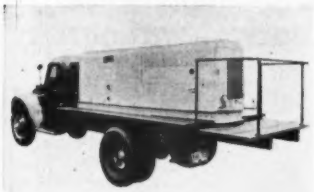
Dingee Succeeds The Late J. W. Jay

J. William Jay, advertising manager for Henry Disston & Sons, Inc., Philadelphia, Pa., died recently of a heart attack. He had been with Disston for the past 15 years.

Succeeding Mr. Jay is John H. Dingee. Mr. Dingee joined Disston as sales promotion manager in 1947, after nine years with Keasby & Mattison Co., where for seven years he was manager of advertising and public relations. He has also served as publicity chairman of the Magnesia Mfrs. Association.

J. H. Dingee

Engine-Driven Sprayers Covers Wide Areas



The A. B. Farquhar Co., York, Pa., manufactures high-pressure sprayers that cover wide areas with both speed and pressure. The company's engine-driven skid-type orchard sprayers with standard steel tanks are equipped with pumps in sizes ranging from 6 to 50 gpm at pressures up to a maximum of 1,000 pounds.

Designed for mounting on automobile and truck chassis, the Special Farquhar Iron Age truck is available for 300- or 400-gallon tanks. Additional equipment available are top and rear spray platforms on the 300-gallon truck or larger, a tank filler and hose, and hose and gun equipment with accessory fittings.

PREPARE NOW
Keep the Job Going

WITH
HAUCK
HEATERS
and
THAWERS

FAST EFFICIENT POWERFUL PORTABLE 2000 F. HEAT

It won't be long now and you'll be needing a heater for your concrete mixer or for feed water—or a torch to thaw out frozen aggregates and dry out forms—or melt ice or snow—or a salamander for temporary heat. Remember there's a time-tried, performance-checked and guaranteed Hauck oil burning Torch Burner or Heater in just the size you need, for immediate delivery, ready to put right to work.

Wire, Write or Phone Us
Your Questions or Order
and get all "set" for cold weather

HAUCK MANUFACTURING CO.

HOW'S YOUR SIGN and SIGNAL I.Q.?

Q. Which Signs require less maintenance?

A. CATAPHOTE'S Bonderized, Galvanized Metal Signs!

Q. Which reflector signs last longer?

A. CATAPHOTE'S Glass Reflector Buttons in High Quality Enameled Steel Signs!

Q. Which type gives best all-weather visibility?

A. CATAPHOTE'S Reflector Button Signs Do *NOT* Black Out in Heaviest Weather

P.S... Get the best! Have your engineer specify Cataphote!

WRITE FOR CATALOG!

SIGNS & MARKERS
STREET NAME SIGNS...SIGN POSTS
DANGER SIGNALS

CATAPHOTE
CORPORATION
TOLEDO, OHIO

AUTOMATIC VOTING MACHINES
Can Reduce Election Costs

REDUCTION IN ELECTION COSTS HAS BEEN POSSIBLE IN MANY PLACES THROUGH THE USE OF AUTOMATIC VOTING MACHINES

Here are Some of the Ways by Which Savings Can Be Accomplished

1. Consolidation of Voting Precincts

With Automatic Voting Machines, the number of polling places was reduced from—

685 to 471 in Baltimore
155 to 108 in Buffalo
500 to 294 in Seattle
556 to 326 in Jefferson County (Louisville), Ky.
32 to 16 in Oshkosh, Wisconsin
28 to 16 in West Allis, Wisconsin

2. Reduction in Printing Costs

With Automatic Voting Machines, printing costs can usually be reduced by 50%. This is due to the fact that a paper ballot is not required for each voter—one set of cardboard ballot labels serves for the entire number of voters voting on the machine.

3. Reduction in the Expense of Recounts

A recount of more than 300,000 votes in the City of Baltimore, Md., has been conducted in approximately 10 hours with Automatic Voting Machines.

A SURVEY TO DETERMINE SAVINGS IN ELECTION COST POSSIBLE IN YOUR COMMUNITY WILL BE MADE UPON REQUEST — WITHOUT COST OR OBLIGATION.

Write—

Automatic Voting Machine Corporation
JAMESTOWN, NEW YORK

"Builders of Voting Machines Since 1898"

No Smudge with This Duplicating-Machine Carbon Paper

The new Hectograph carbon paper looks good to the observer.

Utilizing a plastic surface film to seal in powerful colors used in the Hectograph process, the new finger-proof stainless Hectograph carbon paper developed by the Underwood Corp., 1 Park Ave., New York 16, N. Y., produces sharp master copies with improved uniformity in the intensity of individual type characters, and makes a comparatively large quantity of reproductions.

Since the plastic surface film resists moisture, the carbon paper is unaffected by summer temperatures or high humidity. Its smudge-resistant qualities enhance the product to the operator: it can be handled without constant soiling of fingers and clothing.

Worthington to Handle Ransome Distribution

The Worthington Pump and Machinery Corp., Harrison, N. J., will henceforth handle the manufacturing and distributing activities of its subsidiary, the Ransome Machinery Co. Sales activities will be directed from Worthington's executive offices at Harrison, N. J., through the Ransome Sales Division located at Dunellen, N. J.

"The Story of Holophane"

The founder of the Holophane Co., Inc., 342 Madison Ave., New York 17, Otis A. Mygatt, began making prismatic glass globes and reflectors in 1898. He applied to artificial lighting equipment the long-known laws of reflection and refraction. An interesting and instructive booklet tells "The Story of Holophane."

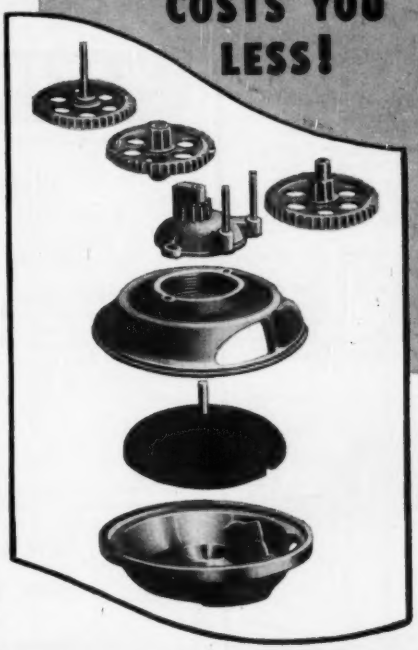
Developing the science of illuminating engineering was too big a job for the resources of any single organization, so in 1906 Holophane's sales manager and chief and consulting engineers invited all those interested in illuminating engineering to a meeting to discuss the formation of a society to foster the science and art of illumination. This became the Illuminating Engineering Society.

Among the contributions of Holophane was the establishment of one of the finest photometric laboratories in the country. Photometers were originally used only to measure the performance of light sources, such as gas jets, incandescent lamps, and arc lamps; then Holophane began the practice of measuring the performance of complete lighting units. It was also the first to establish the now universal practice of publishing photometric curves showing the performance the user could expect from a complete lighting unit. The practice made it easier to predict the amount and distribution of light that could be expected in an interior using such lighting units, and accurate planning of artificial lighting installations became possible. Very recent developments are street lighting equipment using mercury lamps.

BUFFALO METER

Simplicity

COSTS YOU LESS!



● Buffalo Meters have a more simple construction than most water meters, with fewer moving parts. Because of this, these top-quality meters can be sold at moderate price.

Maintenance costs for Buffalo Meters are low. Repair costs are reduced since Buffalo Meters can be taken apart and put together more quickly than can be done with meters of more complicated design. Also, few moving parts means less replacement...ordinarily a considerable item of expense in meter maintenance.

● Buffalo Meter Company makes two brands of water meters...the "American" (bronze casing) for soft or filtered water, and the "Niagara" (galvanized-iron casing) for most hard water requirements. Send for descriptive literature...today!

AMERICAN BRONZE CASE

NIAGARA GALV. IRON CASE

WATER METERS

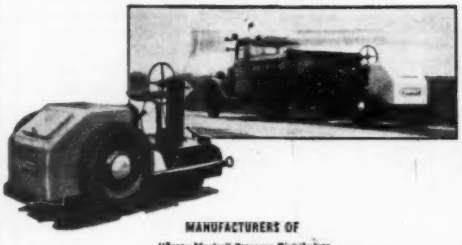
BUFFALO METER COMPANY

2902 MAIN STREET • BUFFALO 14, NEW YORK

This Littleford Roller was Designed for Highway & Street PATCH WORK

Here's the Roller that has the only Hydraulic Raising and Lowering Device. It's a patented Littleford feature that makes it possible to change the Trail-O-Roller from Trailing to Rolling or Rolling to Trailing position in only 2 minutes' time. This Portable Roller was designed for patch work, yet gives as much compaction as a 5 ton tandem and can be used for rolling Highways, Streets, Runways, Parking Areas, Service Cuts, etc.

The Trail-O-Roller is the only portable roller that can cut the cost of rolling operations, because it's engineered to cut labor; dozens of rolling jobs can be done in a day's time. No Contractor or Highway Department can have a more versatile roller than the Trail-O-Roller. It's the Modern Roller for Modern Road Repair Work. See your nearest Littleford Distributor for further details.



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"Tankar" Steam Heaters	"Spray Master" Pressure Distributors	Asphalt Supply Tanks
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LITTLEFORD

BLACK TOP ROAD MAINTENANCE EQUIPMENT SINCE · 1900

LITTLEFORD BROS., INC.
500 E. Pearl St., Cincinnati 2, Ohio

Patch pavements in winter

Heated plate impacts, finishes and cures hot or cold materials — ready for traffic.

No roller, no water, no waiting.

Completes 60 to 80 sq. ft. per minute. Works flush to curbs, rails, manholes.

Fast—60 to 80 Sq. Ft. a minute

Works where a roller can't

Because it works by *impaction* — hitting 1700 to 2000 blows per minute of more than 700 foot pounds impact with its heated plate — the Wayer Impactor puts down pavement patches winter or summer, smoothly finished, thoroly cured, sealed tight and ready for immediate use.

Any bituminous material or dry concrete base for patching roads, streets, parking lots, etc., paving walks and floors. Also tamps earth. Easily portable. Big cost saving. Send for Bulletin 25-8.

WAYER IMPACTOR

Wayer Impactor, Inc., 12 N. Third Street, Columbus 15, Ohio

Planning Director wanted City of Oshkosh, Wisc.

Salary $4,000–$6,000. Qualifications: Degree in city planning or civil engineering, not less than three years' experience in city or regional planning, part of which must have been in a responsible position in the development of a comprehensive city plan. Personality and knowledge of economics and social conditions important. Position permanent. Write to:

Mayor Ernest R. Siewert
City Hall
Oshkosh, Wisconsin

470 FOURTH AVE., NEW YORK 16, N. Y.

Is Information Headquarters

for municipal, waterworks officials, and engineers wanting further details on printed matter from the manufacturers advertising in these pages. Our Reader Service Department will be glad to forward any literature or special requests you mail to us at the above address.

THE AMERICAN CITY

Machine Dictation

SoundScriber equipment owned by the City of Dayton has been in use in this office longer than in any other.

Our use of the equipment has been in about the same way that many offices have been using dictating machines for many years. We have not made any effort to use the SoundScriber equipment for the purpose of recording conferences or plan board meetings.

In spite of the fact that our use of the equipment has not been spectacular, our normal use of it has proven to be quite satisfactory, and we feel that the investment in the equipment manufactured by the SoundScriber Corp., New Haven, Conn., is fully justified in terms of savings in time and convenience.

H. W. STARICK,
Planning Director,
Dayton, Ohio.

Rockwell Engineering Changes

C. B. Johnson has been named chief engineer, and E. R. Gilmore, director of research for the Pittsburgh Equitable Meter Div., of the Rockwell Mfg. Co., 400 N. Lexington Ave., Pittsburgh 8, Pa. These appointments are the result of an expansion program which necessitates the shuffling of key men to cope with the enlarged operations, both in its factories and in the field.

C. B. Johnson

Mr. Johnson started with Pittsburgh Equitable as a product engineer in 1929, and then in 1941, went to the Pittsburgh-DuBois Co. as chief engineer. Three years later he returned to Rockwell as chief engineer of the Nordstrom Valve Division.

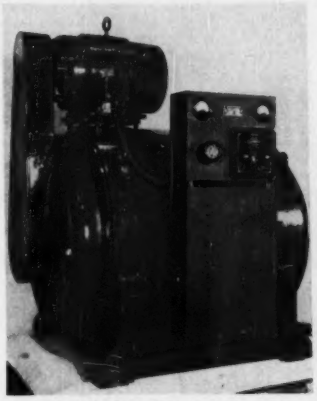
Formerly chief engineer of the meter and regulator divisions of the company, Mr. Gilmore's new duties will involve research, new products, and engineering representation to the field.

New Series Katolight Alternators

A new series of alternators permitting a top capacity of 300 kw at 1,800 rpm, 60 cycles, has been added to its line by the Kato Engineering Co., Mankato, Minn. The new machines are available at speeds of 720, 900, 1,200 and 1,800 rpm, with direct-connected exciter on the high-speed designs and top-mounted exciters on the lower speeds.

The rotors, constructed with dampner windings to facilitate parallel operation, are banded with a steel wire to protect the rotor field windings from centrifugal force damage due to moderate over-speed.

All Katolight alternators are available with Kato exciters ruggedly constructed with generous surplus capacity, and special attention has been given to commutation which permits the user getting long life from brushes. The direct-mounted exciters are arranged so that the exciter armature may be removed easily without dismantling the alternator.



This Katolight is 175 kw, 60 cycle, 3 phase, 900 rpm, 8 pole, 480/830/960/-1,660 volt, with overhead belted exciter, complete with panel including automatic voltage regulator, voltmeter, ammeter, and exciter field rheostat.

THE NEW LOOK
for the
MIGHTY MIDGET

BREAK WITH POWER, SPEED, ECONOMY

The MIGHTY MIDGET reduces the cost of breaking asphalt and concrete to a minimum cost that is unequalled by other methods. Tamps backfill at an unbelievable pace; gives high density. All controls within operator's reach. Operates on 105 C.F.M. compressor.

Ask your dealer or write for complete information.

R.P.B. CORPORATION
2751 EAST 11th STREET • LOS ANGELES, CALIFORNIA

CAST IRON PIPE

Bell and Spigot
Class 150 and 250

2,100 ft. 4 inch
21,500 ft. 6 inch
26,289 ft. 8 inch
14,250 ft. 10 inch
3,000 ft. 20 inch
11,000 ft. 24 inch

12-foot and 18-foot lengths

Immediate Delivery
Any Quantity
Write — Wire — Phone

Sonken-Galamba Corporation
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THatcher 9243

HOTEL STRAND

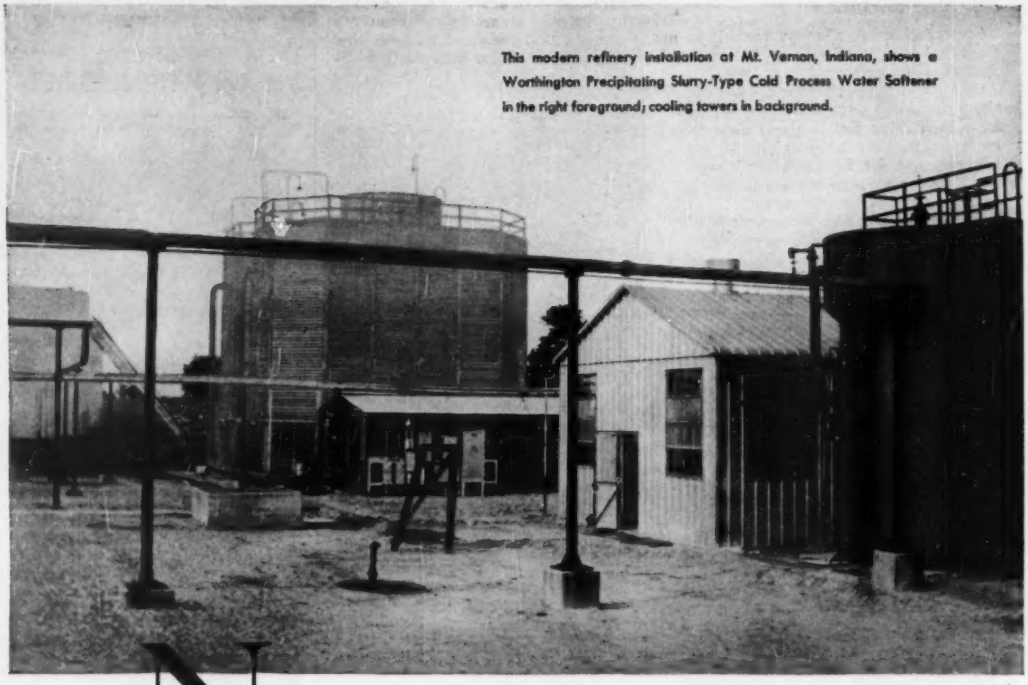
ATLANTIC CITY'S
HOTEL of DISTINCTION

Devoted to the wishes of a discriminating clientele and catering to their every want and embacing all the advantages of a delightful boardwalk hotel.

Spacious Colorful Lounges—Sun Tan Decks atop—Open and inclosed Solaria—Salt Water Baths in rooms —Garage on premises. Courteous atmosphere throughout.

When in Atlantic City visit the
FAMOUS FIESTA LOUNGE
RENOWNED FOR FINE FOOD

OPEN ALL YEAR
Under Ownership Management
Exclusive Penna. Ave. & Broadwalk



This modern refinery installation at Mt. Vernon, Indiana, shows a Worthington Precipitating Slurry-Type Cold Process Water Softener in the right foreground; cooling towers in background.

No other slurry-type cold process softens water this simple way

NO MECHANICAL AGITATION!

This *unique* Worthington Water Softener assures delivery of the uniformly soft, stabilized, clear water needed for scale-free, corrosion-free cooling water systems.

The unique Worthington feature is the scientific use of hydraulic energy provided by the pressure of the general water supply system to maintain the slurry bed. This eliminates the need for moving agitating parts for mixing the applied chemicals with the preformed precipitate.

WHAT'S YOUR WATER TREATING PROBLEM?

The right water conditioning process for one problem may be wrong for another. That's why it pays to call in Worthington, the century-old water-handling equipment maker that knows more about the complicated problems of applying *all four* water conditioning processes than anybody else. Remember, Worthington makes all the essential elements of all kinds of systems. So, by putting complete control and responsibility in the hands of one reliable manufacturer, you can be sure that your water conditioning plant is right for you.

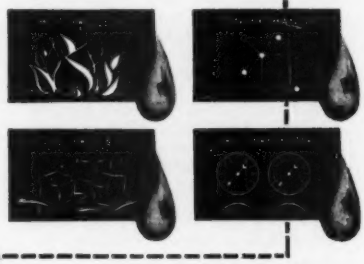
Write today for more information about cold process water softening, and further proof that *there's more worth in Worthington. Worthington Pump and Machinery Corporation, Water Treating Division, Harrison, N. J.*

JB-4

WORTHINGTON

WATER CONDITIONING

Worthington Makes More of the Equipment for All Types of Water Conditioning Systems



Special Lights for Berlin's Tempelhof Runway

Inspecting the lights at the factory are (left) Irving J. Mack, vice-president of American Gas Accumulator, and R. K. Dean, Civil Aeronautics Administration inspector.

A set of 40 high-intensity lights mark the approaches to the main runway at the Tempelhof Air Force Base, Berlin, to assist the landing of air force transport planes on Operation Vittles during periods of fog, darkness, and rain when the limits of daylight visibility are as low as ⅛ of a mile. Known as High-Intensity Approach Lights, the system is manufactured by the American Gas Accumulator Co., 1029 Newark Ave., Elizabeth, N. J. The left row of lights, as viewed by the approaching pilot, will be red and the right row, yellow.

Joint Convention Visits Universal Concrete Plant

One of the phases of the joint meeting of the West Virginia Section of the American Water Works Assn. and the

This 48-inch pipe was made for the Weirton Steel Co. of Weirton, W. Va.

West Virginia Sewage and Industrial Waste Assn., was a field trip through the Universal Concrete Pipe Co. plant in Clarksburg. Some of the displays were:

A 48-inch full-circle, clay-lined, extra-strength reinforced concrete pipe with Rexon coating and Basalit joint compound, manufactured for the Weirton Steel Co.; an 18-inch, 3-foot vitrified clay ring inserted in 24-inch reinforced concrete pipe; a 12-inch reinforced concrete pipe coated on the internal and external with Rexon.

Gas-Engine Development By Cooper-Bessemer

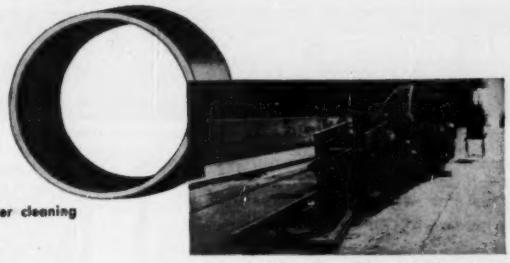
The Cooper-Bessemer Corp., Mt. Vernon, Ohio, has adapted its Turboflow development to the four-cycle gas engine, an improvement that produces on increase of 14% more power, while cutting fuel coasts by at least 20%.

Expected to be on the production line by July 1, this development, hitherto used only on the two-cycle natural-gas engine, will permit the discard of the standard fuel-mixing valve and utilize in its place a simple gas injection system similar to that used on the company's atmospheric gas-diesel engines.

The significance lies in the fact that in any area where natural gas is available at $1.10 or less for a thousand cubic feet (which is the fuel-cost equivalent of the current 14 cents per gallon for fuel oil), fuel-cost savings can be achieved.

Before cleaning

A CLEANING JOB THAT LASTED 30 YEARS



After cleaning

Special Power Winch for pulling cleaning head through pipe.

Just 30 years ago the water mains of the city of Toledo, Ohio were successfully cleaned by National.

The thoroughness with which National performed that initial job, along with the exceptionally fine water treatment system installed by Toledo's Water Works Department has enabled the original cleaning to last 30 years.

It was because of that unusual record that Toledo's progressive water works department *has again selected National* to clean its entire water main system—a program that will take over five years to complete.

Tests made on those lines already cleaned by National indicate higher pressure and increased carrying capacities, resulting in greater fire protection for Toledo's outlying districts.

There's no obligation to have a National engineer estimate the cost of cleaning your lines. Why not write *today!*

30

NATIONAL WATER MAIN CLEANING CO., 50 Church St., N.Y. 7, N.Y.

ATLANTA, 1221 Mortgage Guarantee Building • BOSTON, 115 Peterboro Street • CHICAGO, Room 1336, 122 So. Michigan Avenue • HOUSTON, 2518 Grant Street • KANSAS CITY, 421 BMA Building LOS ANGELES, 448 South Hill Street • MEMPHIS, 822 Dermon Building • OMAHA, 3812 Castellar Street • RICHMOND, 210 East Franklin Street • SPRINGFIELD, MO., 844 North Main Street • SALT LAKE CITY, 149-151 W. Second So. Street • SAN FRANCISCO, 681 Market Street • MONTREAL, 2028 Union Ave. • VANCOUVER, B. C., 505 West 1st Ave. • WACO, P. O. Box 887 • WINNIPEG, 576 Wall Street • HAVANA • MAYAGUEZ, PUERTO RICO • BOGOTA • CARACAS • MEXICO CITY

Is Your Reservoir Leaking?

Here is the reservoir of a western New York town before and after it was repaired. It was rebuilt and its capacity increased by our experienced personnel who installed a reinforced "Gunite" bottom and slope sides. The slopes were extended up six feet to increase the capacity by 260,000 gallons.

Now is the time to give consideration to repairs for next year. Our engineers will gladly inspect your facilities and make recommendations for permanent, economical repairs. No obligation, of course.

Write our nearest office for complete catalog and details.

PRESSURE CONCRETE COMPANY "GUNITE" CONTRACTORS AND ENGINEERS

193 EMMET ST., NEWARK 5, N. J. • 33 N. LA SALLE ST., CHICAGO 2, ILL. • S. COURT ST., FLORENCE, ALA.

AQUA VALVE BOX LOCATOR

Master of the Toughest Location Problems!

Finds hidden boxes in half the time. Instant top-view reading, no stooping. Guaranteed in snow, ice, any paving!

$29.50 F.O.B. CIN. O

Complete with leather case and strap.

Send no money for 15 day FREE TRIAL!

AQUA
Survey & Instrument Co.
2513 LESLIE AVE., NORWOOD
CINCINNATI 12, OHIO

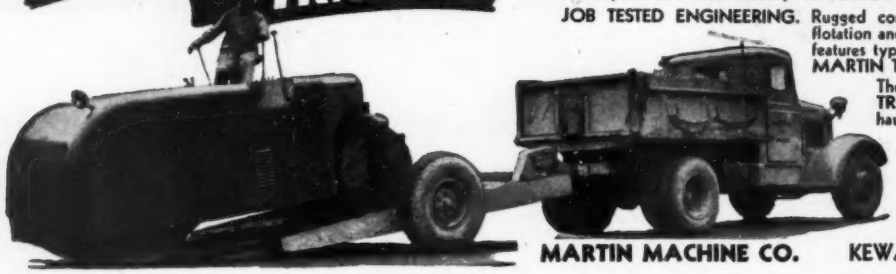
***Throughout America* Dickinson Lawn Seed**

In parks and on public grounds throughout America you will find smooth velvety lawns built with time proven Dickinson lawn grass seed. Quality seed, blended according to formulas that have been tested and improved throughout the years. Write for complete information.

The Albert Dickinson Company, 2764 West 35th Street, Chicago 32, Ill.

DICKINSON

MARTIN model **22** **TRAILER**



ANNOUNCING A VERSATILE NEW TRAILER WITH A CAPACITY OF 5 TO 7 TONS.

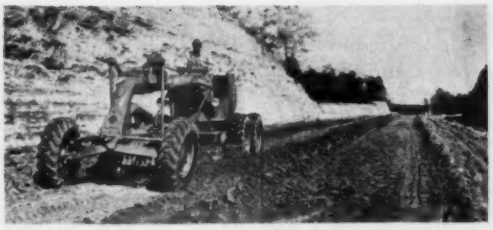
EXTREMELY LOW PLATFORM HEIGHT. Rollers, Track tractors, and bulk material easily loaded and transported.

JOB TESTED ENGINEERING. Rugged construction, ample flotation and adequate safety features typify all models of MARTIN TRAILERS.

There is a MARTIN TRAILER for every hauling job.

At your request let us send you detailed specifications and prices.

MARTIN MACHINE CO. KEWANEE, ILL.



Allis Chalmers Heavy-Duty Grader

The Allis-Chalmers AD-4 bringing a road to grade.

The new AD-4 motor grader produced by the Allis-Chalmers Mfg. Co., Milwaukee 1, Wis., has a General Motors 104-brake-hp, 2-cycle diesel engine.

As do the other machines produced by Allis Chalmers, the AD-4 has special tubular frame design which more easily absorbs twisting strains and shocks through the flexing action of the cylindrical sections.

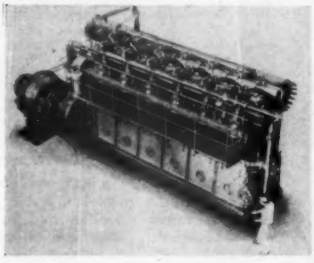
A complete blade range to handle any job is achieved by hydraulically controlled front-mounted lift cases which provide direct down pressure and allow cuts measured to a fraction of an inch. A 30-inch throat clearance permits the handling of large windrows and the involute design of the Roll-Away moldboard also expedites the handling of bigger windrows because the material is rolled, not pushed.

The machine has six forward speeds ranging from 2.4 mph to 16.6 mph, and three reverse speeds ranging from 2.8 mph to 6.2 mph.

New Dual-Fuel Diesel From Lima-Hamilton

A new 2-cycle, 21½-inch dual fuel diesel engine, with fast changeover from gas to oil and oil to gas, and engine rating of 425 hp per cylinder at 240 rpm in sizes from 5 to 10 cylinders, has been introduced by the Lima-Hamilton Corp., 60 E. 42nd St., New York City. The dual-fuel diesel is the second new engine announced by the company since October, when it brought out the 9 by 12 diesel, which features intercooled supercharging and ratings up to 1,200 hp for eight cylinders.

Designed for operation on low-pressure gas with extremely low pilot fuel



requirements (rates as low as 8 1/3 pounds per hour per cylinder), the diesels have a rotary valve located in the exhaust outlet which, in conjunction with Lima-Hamilton's loop-type scavenging principle, enables the cylinder to entrap nearly 40% more air with a resultant proportional increase in power output.

Control of air temperatures to the engine is maintained by means of a cooler located between the scavenging blower and the engine. Gas injection, in very closely metered quantities, starts as the exhaust ports are closing, thus compressing the gas with the entrapped air. The gas pressure in the main gas manifold is varied in direct proportion to the engine load, and the amount of scavenging air is varied according to load.

Safety devices such as quick-closing valves in each cylinder and an underspeed governor eliminate the usual dangers associated with gas operation.

Research Program Inaugurated by Hardie

The Hardie Mfg. Co., Hudson, Mich., marks the expansion of its engineering and research department with the addition of Robert M. Pratt, who will lead a laboratory and field study of all the new types of spray application, including the new concentrates and semi-concentrates.

Mr. Pratt has worked at Cornell University as Research Assistant in Plant Pathology, with the Bureau of Entomology and Plant Quarantine on the Peach Mosaic Project in Southern California, and as Agricultural Inspector with the Agricultural Commissioner's office in San Diego County, Calif. His work at Cornell led to the development of the Cornell-type spray-duster which Hardie is now preparing to manufacture.

American Towns & Villages LOOK TO Revere ELECTRIC MFG. CO. for

FLOODLIGHTING
AIRPORTS, PLAYGROUNDS, PARKS, SWIMMING POOLS, Etc.

Write today for our catalog showing floods ranging from 150 to 5,000 watt. Catalog contains practical layouts for athletic fields and other recreational areas. It's a guide every recreational director should have!

REVERE ELECTRIC MFG. CO.
6015 Broadway Chicago 40, Illinois

We Are Happy To Announce

The merger of Lewis Manufacturing Co., manufacturer of Pierce Bear Tandem Rollers, with the Browning Manufacturing Co., manufacturer of BMCO Pneumatic Tired and Sheeps Foot Rollers.

See your Dealer or contact us for full information on our complete line of compaction rollers.

A few territories are open to dealers under this new arrangement and we will welcome inquiries.

LEWIS-BROWNING MFG. CO.
111 Humble Ave. P. O. Box 2707
SAN ANTONIO 6, TEXAS

Snow *Tonight* Clear *Tomorrow*

Snow Tonight—Clear Tomorrow is much more than a weather forecast. It's an ideal slogan for the thousands of rugged GMC trucks that work while we sleep to keep the highways open for safe, speedy travel.

GMC extra value shows up best when working conditions are at their worst . . . because chassis are truck-designed and truck-engineered from radiator to rear axle . . . because power plants have the same basic design and features as those of the durable and dependable GMC "Army Workhorse" engine.

Whether your hauling job calls for "tough going" or "smooth sailing" . . . the extra stamina built into every GMC means extra miles of dependable, economical operation.

THE TRUCK OF VALUE

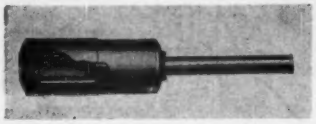
GMC TRUCKS

GASOLINE • DIESEL

GMCs are available in light, medium and heavy duty models . . . in a range of seven gasoline and two Diesel engines . . . and with chassis and equipment options that permit truck and tractor types exactly suited to every public utilities hauling job.

GMC TRUCK & COACH DIVISION • GENERAL MOTORS CORPORATION

New Terminal Exhaust Snubber



The Burgess-Manning Co., Libertyville. Ill., has developed a new terminal exhaust snubber for use on all 4-stroke-cycle diesel and gas engines with relatively short exhaust systems in stationary and portable service, and 2-stroke-cycle gas engine compressors operating on the Otto cycle. The Series SDT are available in pipe sizes from 5 to 14 inches, and combine the tail pipe with the exhaust snubber to give effective noise control by dissipating the slug's energy before it is released to atmosphere; the snubbers prevent noise by smoothing the flow of exhaust gas. High restriction is avoided by offering maximum impedance to the high-velocity exhaust slug and minimum restrictions to the normal flow of exhaust gas.

Profitable Advice on Airports

Airports and airfields often cost more than railway terminals and depots, yet the turnover of business at an airport is only a small fraction of that of the railway. That is why financing most airports is a delicate operation requiring much study. Only by shrewd planning can they operate at cost or make a profit.

Many brochures have been issued telling city officials how to go about acquiring a suitable airport. However sound the ideas and procedures recommended, nothing takes the place of trustworthy consulting advice. Leigh Fisher & Associates, Detroit 6, Mich., has a number of free booklets touching on problems that faced its municipal clients in the field of airport finance, earnings, operation, and management.

A survey of St. Joseph County Airport at South Bend, Ind., resulted in a profitable renegotiation of airline contracts which justifiably doubled the charges. Its new terminal building, built this year, is packed with earning power.

A study made of the Bellaire site at Houston, Texas, provided not only for tapping new revenues from non-aviation sources but for reducing noise penetration into residential areas as well.

An analysis of the business operation of the Wichita (Kans.) Municipal Airport covered increased revenues from present and new sources, establishing rates and charges and attaining financial stability of the investment.

Should a terminal building be centralized or decentralized? The firm was retained to settle this controversial question for the Minneapolis-St. Paul Metropolitan Airport Commission.

A study at Phoenix, Ariz., materialized into Sky Harbor Airport, designed not to be a monumental project but to pay its way. Its director expresses his appreciation to his Municipal Aeronautics Commission and to the City Commission for turning over to him this practical investment. Sky Harbor Airport is one of the few that retires its bonds, pays its bond interest, and sets aside a capital improvement fund out of its operational revenues.

Development of airport income is not accomplished by increasing charges, nor is it done by only salesmanship and luck. The airport and the community in which it is located must have the proper inter-relationship so that the services and facilities offered on the airport are needed or desired by the potential customers. It should be recognized that an airport's income is generated from the area within which it is located, and to develop an airport's income, the surrounding community and area must be thoroughly understood. The limitations of the community must be recognized, and any income-development program must be patterned within the ability of the area to provide such additional revenue.

There are two immediate steps which can be taken to develop airport income. The two steps are: KNOW YOUR MARKETS and KNOW YOUR COSTS. An explanation of the procedure to be followed in ascertaining both market and cost is given in one of the Leigh Fisher books.

Worm Lock forces lid open. Key aids as lifting Handle.

METER COVERS

LOCK TIGHTER LIFT EASIER

WITH FORD LIFTER WORM LOCK

Here is a time-proven meter box lock that

- **Makes Tight Seal**—Ford Worm Lock action pulls lid down tightly on frame, assuring maximum cold weather protection for meters.
- **Simplifies Lid Lifting**—In unlocking for reading, the Ford Worm Lock produces a powerful screw-jack action, which breaks any ice or dirt seal around lid. Key attaches automatically and serves as handle for easy lifting.
- **Protects Pedestrians**—The Ford Worm Lock holds lid flush with top of frame, preventing lid being kicked off and possible injury to pedestrians.
- **Lasts for Decades**—Ford Lifter Lock bolts are of forged Everdur, a tough 98% copper alloy, that wears indefinitely. Many Ford Locks have been in service for over 30 years.

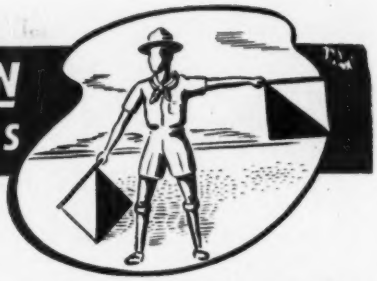
Over a Million Ford Worm Locks in service. Write today for complete details.

FORD

FOR BETTER WATER SERVICES

THE FORD METER BOX COMPANY, INC.
Wabash, Indiana

IF WE CAN'T TALK—WE CAN MAKE SIGNS



Signs that prevent traffic trouble on street or highway speak a universal language . . . one that motorists have learned to respect. Making quality signs in our ultra-modern industrial plant at Wichita, Kan., is our contribution to traffic safety everywhere.

Traffic officials in Chicago, New York, San Francisco and hundreds of other cities have learned that Miro-Flex units tell the story quickly and well. Many key cities use our Miro-Flex signs exclusively. We make these signs of the highest quality galvanized, bonderized steel. Baked-on enamel lends unusual lasting qualities. Plain . . . embossed . . . reflectorized with glass or Stimsonite buttons . . . or Scotchlite*. *Write for catalog.*

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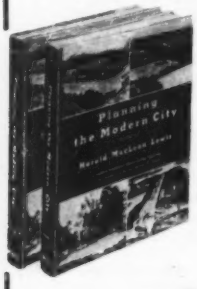
You'll get new ideas from this up-to-date book

PLANNING THE MODERN CITY

A new book by HAROLD M. LEWIS



based on the book by the late Nelson P. Lewis. It appears in two volumes. The first volume contains a general introduction to urban planning, an analysis of its objectives, and a discussion of the main elements of a city plan.

Surveys Social and Economic Aspects

Although the author considers city planning primarily an engineering problem, he has devoted the second volume to a discussion of the special physical, social, legal, economic and administrative problems which must be considered by a planning commission.

1949	Vol. I	284 pages	$6.00
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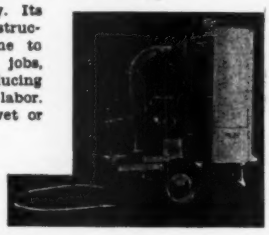
VACUUM LEAF LOADER

Is known for its versatility. Its amazing principle in construction enables this machine to handle wide variety of jobs, eliminating or greatly reducing costly cleaning-up hand labor. It will pick up leaves, wet or dry.



ABOVE: Utility Vacuum Cleaner, for small areas

AT LEFT: Vacuum Leaf Loader

UTILITY VACUUM CLEANER

Designed for small areas, such as estates, golf and country clubs, parks, and playgrounds, industrial yards, around shrubbery, high walls, fences, etc.

For facts write for descriptive bulletins

LEAF LOADER DIVISION
American Structural Steel & Tank Co.
M. A. Elliotte, Sales Manager
21050 W. 8 Mile Road
Detroit 19, Michigan

Foxboro Announces Multi-Record Dynalog

The Multi-Record Dynalog electronic recorder manufactured by the Foxboro Co., Foxboro, Mass., is a high-speed instrument capable of making from one to six different records on one circular chart.

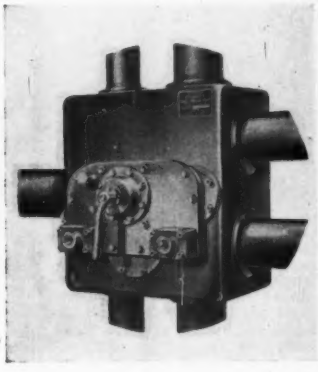
The recorder has only one measuring system, either resistance bulb or EMF type, but a switching unit automatically brings the vari-colored pens into recording position at 6-second intervals, in any sequence desired.

An innovation in the design is the

use of its Rotocolor pen wheel holding the six recording pens, which are magnetically selected in turn and held in recording position by a single pen arm. The instrument may be used for the measurement of temperature, pressure, humidity, liquid level, pH, conductivity, speed, and other process variables.

Single Control Valve Saves Time In Zeolite Softening

The Cochrane Hydromatic single control valve, manufactured by the Cochrane Corp., 17th St. and Allegheny



Ave., Philadelphia 32, Pa., provides simplified operation of all types of zeolite softeners, ion-exchange systems, and pressure filters, and minimizes the possibility of faulty operation through error in manipulation.

In addition to integrating the functions normally performed by a valve nest, the Hydromatic valve also incorporates such features as built-in backwash and rinse-rate controllers; it is in effect a six-position valve with four normal operating positions and two standby positions.

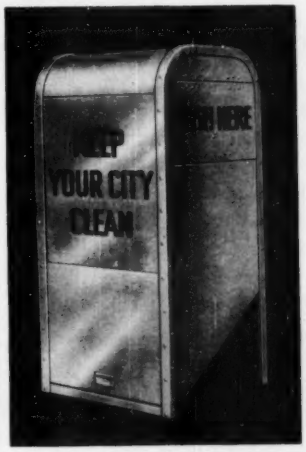
In the control of zeolite systems, the four operating positions provide separate control of backwash, regenerant feed, rinse, and service so that separate flow rates may be assigned to each operation unaffected by the requirements for other phases of operation.

In the majority of cases of control of pressure filters, only three operating positions are essential—for control of backwash, rinse, and service. However, a fourth position is provided for actuating such devices as a filter agitator or a filter aid or pre-coat type of feed.

Pennsylvania Refining Looking for Distributors

The Pennsylvania Refining Co., 2686 Lisbon Rd., Cleveland 4, Ohio, manufacturers of the carburetor and fuel system cleaner, Penn Drake Gumout, (which dissolves all harmful gum, varnish, and lacquer deposits in the entire fuel system), is looking for recognized distributors. The concern also has several territories open to manufacturers' representatives.

Smithson Trash Receptacles



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- NO PAINTING
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NORWICH STREET & PARK BASKETS

Citizens take pride in litter-free streets and parks. Two steps are the minimum essentials for attaining this litter-free condition: (1) installation of plenty of easy-to-use waste receptacles, and (2) an educational campaign, conducted with vigor, aiming to induce the thoughtless minority to make use of these waste receptacles.

Norwich Street and Park Baskets are the choice of many cities because they are easy-to-use, inexpensive, and long-wearing.

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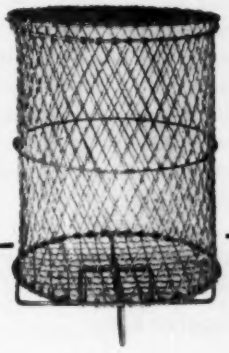

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Three great advantages of the Dempster-Dumpster System are SANITATION, CLEANLINESS and ECONOMY. Its sanitation and cleanliness are due to the completely enclosed steel containers which receive trash and rubbish as it accumulates. Once the rubbish is inside container, it can't be scattered and littered over streets and alleys by wind or scavengers . . . and, more important, it can't be contaminated by rats or flies. Its economy and efficiency of operation are naturally attractive to any BUDGET-MINDED Municipality. When you consider that one Dempster-Dumpster truck hoisting unit and one man, the driver, can handle a large number of these detachable containers and serve an amazingly large area of your city, for bulk trash and rubbish collection, you'll realize why one Dempster-Dumpster can do the work of 5 to 10 conventional trucks and crews. Savings in gas, oil, tires, maintenance and equipment investment is amounting to thousands of dollars annually to cities like Baltimore, Richmond, Birmingham, Pensacola and scores of other large and small municipalities. The simple operation of this system is illustrated in the photographs at right. Ask today for complete information.

The amazingly simple stages of picking up, hauling and dumping the detachable containers are shown in the three photos above. In the top photo, driver has backed the truck hoisting unit up to an 8 cu. yd. Apartment Type Container, attached two chains and returned to the hydraulic controls in the truck cab. In center photo, container has been hydraulically lifted into carrying position ready for hauling to disposal area for automatic dumping as shown in the bottom photo.

DEMPSTER BROTHERS, Inc.

819 Dempster Bldg. Knoxville 17, Tennessee

Tire Marking For Parking Regulations On a Motorcycle

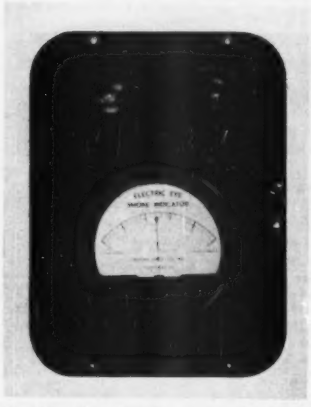
A new tire-marking "stick" is demonstrated by John Harley, of the Harley-Davidson Motor Co., Milwaukee 1, Wis., on a 2-way radio-equipped police Servi-Car. Made of light aluminum tubing with a flexible rubber hose at the end for chalk insertion, the improved marker features a finger-formed rubber grip for ease in handling.

Automatic Jet Control Stops Smoke

The Brooke Engineering Co., Inc., 4517 Wayne Ave., Philadelphia 44, Pa., has developed an electric-eye smoke indicator which is of particular help to city smoke inspectors when advising various industries about what to do to cut smoke resulting from boiler installations. The mechanism has applications in water- and sewage-works plants which generate power for pumping through the use of oil or coal.

A light beam projected across a boiler or furnace flue shines on a phototube which measures smoke density. When this density increases beyond a predetermined amount, a red warning light flashes and a time-relay circuit is closed, starting the over-fire air jets which remain on for the period of time for which the time-relay circuit is set Upon completion of the time cycle, the jets are turned off. If smoke returns, the entire cycle is repeated. Manual push-button operation of the jets is also provided.

The smoke indicator gives a visual indication of the flue-gas density at all times.



The Brooke electric-eye smoke indicator; the jets remain in operation from 20 seconds to 20 minutes, as set by the operator on the timer.

Gilbert Associates Adds Three to Staff

Gilbert Associates, Inc., 412 Washington St., Reading, Pa., engineers, architects, and consultants, has added three members to its sanitary engineering staff: Robert J. Schatz, formerly with the Pennsylvania Department of Health, will work out of the main offices in Reading; E J. Hanemann and J. H. Brendlen will be in the Houston office.

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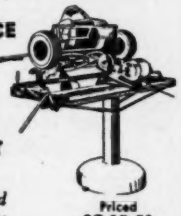

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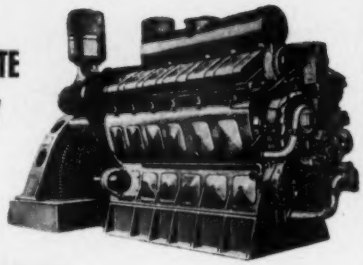

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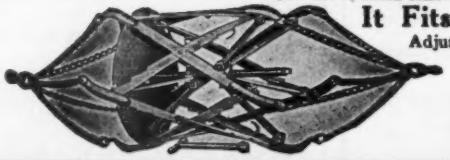
Open and in action removing roots and caked sediment like this.



It Fits in on Every Sewer Cleaning Job

Adjusted in 30 seconds to fit any sewer from 8 to 30 inches.

Will clean the entire sewer wall, top, and sides as well as the bottom, cutting and removing the roots and caked sediment, putting the sewer system in almost 100% clean condition.

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for 1949 will be found on pages 834 to 852

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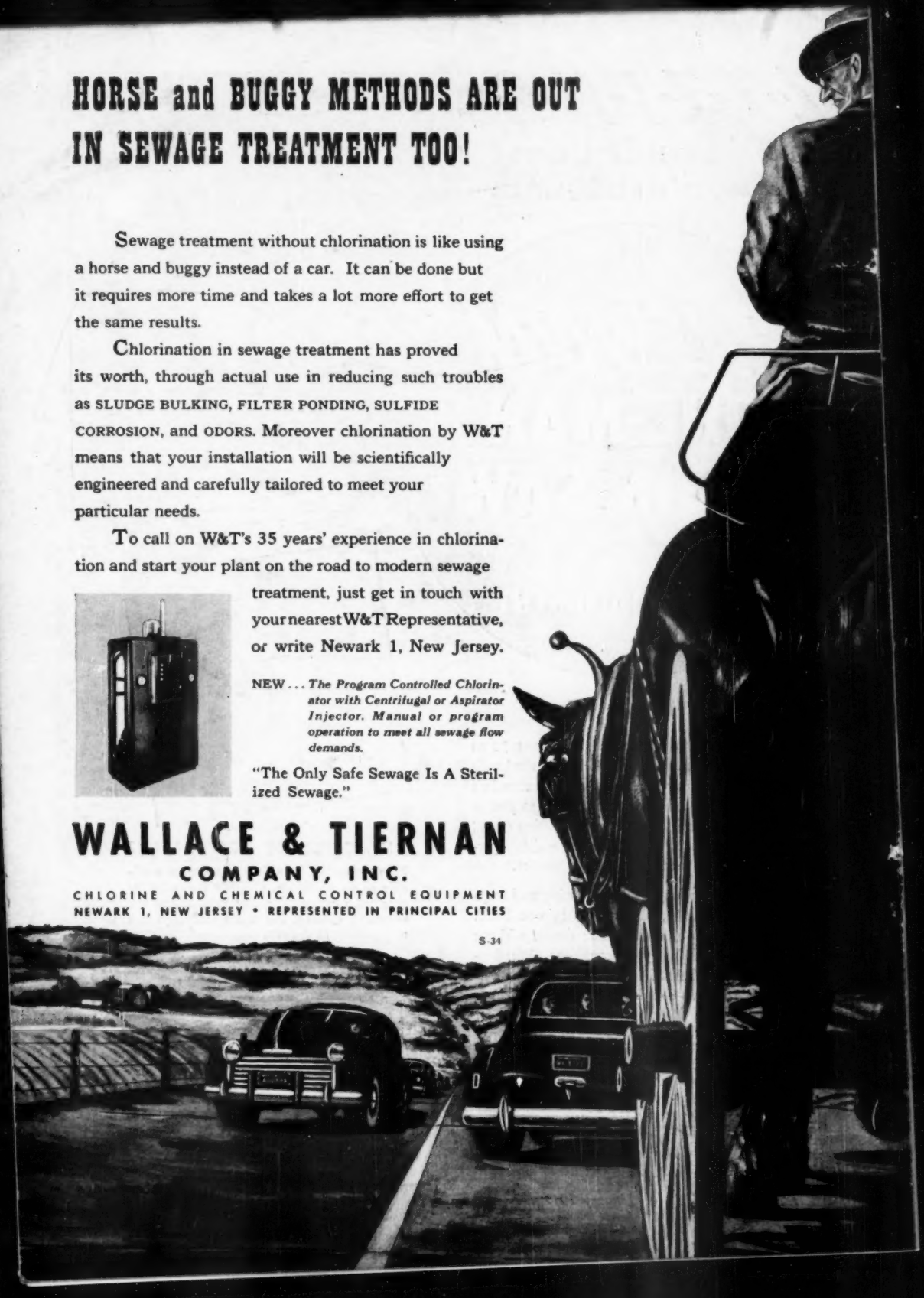
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